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## PART I.

## ORIGINAL COMMUNICATIONS.

ART. I.—"*Obstetric Morality:*" *being a Reply to an Article in* No. LXXXVII. *of* "*The Dublin Review.*" By FLEETWOOD CHURCHILL, M. D. T. C. D., M. R. I. A., Fellow of the King and Queen's College of Physicians; Professor of Midwifery and Diseases of Women and Children; one of the Presidents of the Obstetrical Society, &c., &c.

[Read at a Meeting of the Dublin Obstetrical Society, May 12, 1858.]

MY attention having been called to an article in the last Number (April, 1858, p. 100) of "The Dublin Review" on "Obstetric Morality," I have thought the subject of sufficient importance to bring it before the Obstetrical Society. The article is written to show the immorality of the operation of craniotomy under any circumstances, if the child be alive; and although the question has been repeatedly debated in former times, yet as it is comparatively new to the present generation, it appears to me very desirable that those who are now practising midwifery, and those who are preparing to practise it, should know the precise reasons for admitting or rejecting the operation.

I have read the review over very carefully several times, as dispassionately as I could, and I am free to confess that I am

satisfied neither with the theological nor obstetrical reasoning of the author: I strongly suspect, indeed, that the writer is not a medical man.

If any apology be needed for *my* taking up the subject, I trust it will be found in the fact that one of my works (conjointly with Dr. Maunsell's) is taken as the exponent of this "Obstetric Morality." Of the tone of the review towards myself, though somewhat uncharitable in its imputation of motives, I make no complaint; but I should have preferred the third edition of my work being taken as the expression of my present views, instead of the first edition, published sixteen years ago.

In the observations which follow I shall discard all personal feelings, and simply confine myself to the question in debate, and I shall endeavour so to treat the subject as to give no offence to those who may differ from me. In a mixed question like the present, it is perhaps improbable that all should agree, but in differing, it is surely possible that each may give the other credit for the highest motives, and respect him for his conscientious adherence to what he thinks right.

The question at issue—the morality or immorality of destroying a living child by craniotomy—has always been regarded in a threefold aspect, moral, theological, and obstetrical, the latter resting on and inseparably connected with the former, at least in the opinion of one party; so that, although this is not the place for a moral or theological dissertation, nor I the most competent person to undertake it, yet it is impossible to avoid the subject entirely. I shall, however, confine myself to a short statement and examination of the arguments: with this advantage, that the reviewer, having based his theological reasons upon Holy Scripture, an authority to which I implicitly bow, we have, so far, common ground.

I. In the first place, the reviewer objects to the destruction of an unborn babe on the grounds that it is a breach of the sixth commandment, "Thou shalt do no murder;" and also that it is contrary to the denunciation in Genesis, ix. 6:—"Whoso sheddeth man's blood, by man shall his blood be shed, for in the image of God made He man." If the latter text be more than authorization of capital punishment for murder, which I do not deny, it is clear that it must be subject to limitation, otherwise it would prohibit killing in self-defence, or in defence of another, which is considered lawful by the Roman Catholic Church, and it would render war unlawful. If, then, it be thus modified, there is no reason why the limitation may not be extended so as to include the operation in

question, provided I can show that it cannot justly be considered a breach of the sixth commandment.

What, then, constitutes *murder*, and in what does it essentially differ from *killing* or *homicide?* For our present purpose we shall derive the best assistance from the law of the land, which is the highest practical exponent of the law of morals. I am indebted to a distinguished legal friend for the following definitions:—"Murder, then, is the killing any person under the king's peace with *malice prepense, or aforethought*, either express or implied by law:" so say Lord Coke, Sir Matthew Hale, Sergeant Hawkins, &c. "Of this description, the *malice prepense, malitia precogitata*, is the chief characteristic, the grand criterion by which murder is distinguished from any other species of homicide"[a]. "It should, however, be observed, that when the law makes use of the term *malice aforethought* as a description of the crime of murder, it is not to be understood merely in the sense of a principle of malevolence to *particulars*, but as meaning that the fact has been attended with such circumstances as are the ordinary symptoms of a *wicked, depraved, and malignant spirit*, a heart regardless of social duty, and deliberately bent upon mischief"[b].

This malice may be either *express* or *implied by law.* Express malice is when one person kills another with a sedate, deliberate mind and formed design: such formed design being evidenced by external circumstances, discovering the inward intentions, as, lying in wait, antecedent menaces, former grudges, and concerted schemes to do the party harm[c].

Malice is *implied by law* from any deliberate and cruel act, committed by one person against another, however sudden; thus, when a man kills another suddenly, without any, or an inconsiderable provocation, the law implies malice, for no person, unless of an abandoned heart, would be guilty of such an act upon a slight or no apparent cause[d].

I think it will be at once admitted that killing a child in utero, which I shall prove can be by no means born alive, and which must die in a few hours, but the prolongation of whose life, even for those few hours, will most seriously, if not irreparably, endanger that of the mother, cannot be brought under the definition of murder; there is no malice aforethought expressed or implied; it is done from necessity, but without

[a] Blackstone's Commentary, vol. iv. p. 198; Gustinean's Case, 1 Leach, p. 457.
[b] Justice Foster's Crown Law, pp. 256, 262.
[c] 1 Hale, 451; 4 Blackstone's Commentary, p. 199.
[d] East's Pleas of the Crown, cap. v. sect. 2, p. 215; Blackstone's Commentary, vol. iv., p. 200.

any evidence of a "wicked, depraved, or malignant spirit:" it is not, therefore, in any true sense murder. Had there been the slightest reason for thinking it so, I have no doubt that there would have been a provision made by law, just as there has been against criminal abortion: so far from this, "an infant in its mother's womb, not being *in rerum naturâ*, is not considered by law as a person who can be killed *within the description of murder*"[a].

*Killing or Homicide* is by law divided into three kinds: it is either justifiable, excusable, or felonious. It is *justifiable* where the killing arises from imperious duty prescribed by law, as the lawful execution of a criminal; or is owing to some *unavoidable necessity*, as in the case of an attack on life, property, or chastity, where the death occurs in self-defence. This is admitted by the Roman Catholic authorities, for I find in a little work, with the imprimatur of the Most Rev. Dr. Cullen, the following:—"It is not a sin to defend your own life or *another's life*, chastity, or property of great value, when unjustly attacked, even though it cannot be defended without taking away the life of him who attacks it"[b].

It is *excusable*—1. In case of death by accident, without any culpable neglect, or default, and whilst engaged in lawful occupation or amusement. 2. When death occurs in protecting one's self from an assault, or the like, in the course of a sudden affray, where the slayer had no other probable means of escaping from his assailant.

It is *felonious* in the case of murder or manslaughter.

Now I shall be able to show that craniotomy, under proper circumstances, is "an unavoidable necessity," and if, therefore, it be legally justifiable to take one life for the protection of another, we have precisely the conditions applicable to our case, with this additional justification, that the life we take is forfeited, i. e. it will inevitably cease, as the child *cannot* be born alive.

It is the more important to be satisfied on this point, for it is clear that, so far as craniotomy is concerned, it must be decided on moral grounds, inasmuch as, whether the child dies in utero or is killed, baptism is equally out of the question.

There is an argument frequently used by the reviewer,—"that we are not to do evil that good may follow," about which a few words may not be amiss. It is perfectly true, as an aphorism, but, used as the reviewer uses it, it is a *petitio prin-*

[a] 1 Hale, P. C., p. 433.

[b] "What every Christian must know and do," p. 23, *note*.

*cipii*, for the "evil" is the very point in dispute. Again, what is meant by "evil"? Pain is an evil, yet we inflict pain to save life,—"doing evil that good may come." That, therefore, cannot be the meaning. It must be moral evil, something involving guilt, which would be unlawful.

Moreover, in the way in which it is applied by the reviewer, it is an accusation by implication,—"we may not do evil," &c., which is what *you* propose to do. It may "be slanderously reported, and some may affirm that we say, Let us do evil that good may come;" but in the true sense of the word "evil," we repudiate the principle as strongly as the reviewer or the Roman Catholic Church.

II. But a second and graver objection, and one that seems to underlie the former, is, that in destroying the fœtus in utero we destroy both soul and body, because it cannot be previously baptized. It is only fair to give the reviewer's own words on this subject:—"It is no less certain that this soul, which has been created by God, and infused into the body at the first moment of existence, has, in the language of holy David, been conceived in iniquities, that is, that it has inherited the stain inflicted on all his posterity by the prevarication of Adam. Nothing defiled can enter into heaven, and the defilement of this soul can only be washed out in the waters of baptism. To it, in common with all mankind, have been addressed the words of the Saviour, 'Unless a man be born again of water and the Holy Spirit, he cannot enter the kingdom of heaven.' It is strange that those who profess to be guided exclusively by Scripture should deny that the external rite of baptism is necessary to salvation, for it is plainly and repeatedly inculcated in the Word of God. That the second birth by water and the Holy Ghost, spoken of in John, iii., means the external rite of baptism, may be inferred from the fact that our Lord's disciples soon after began to baptize, as we learn from the beginning of the following chapter. The word 'to baptize' signifies 'to wash:' and on the very last occasion on which our Lord addressed His Apostles after His resurrection, He told them: 'All power is given to me in heaven and in earth. Going therefore, teach ye all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost.' When the people were melted to compunction of heart by St. Peter's first sermon, they asked what they should do? 'But Peter said to them, Do penance, and be baptized, every one of you, in the name of Jesus Christ, for the remission of your sins. They therefore that received his word were baptized.' That this baptism was by water is manifest by what occurred when

Philip preached Jesus to the eunuch; for 'as they went on their way, they came to a certain water, and the eunuch said, See, here is water, what doth hinder me to be baptized? And they went down into the water, both Philip and the eunuch, and he baptized him.' Ananias told St. Paul, when sent to him by God, 'Rise up, and be baptized, and wash away thy sins.' So also, when St. Peter saw the Holy Ghost falling on the Gentiles, he exclaimed, 'Can any man forbid water, that these should not be baptized?' This idea is strongly conveyed in various places by St. Paul. 'Christ loved the Church,' he says, 'and delivered himself up for it, that he might sanctify it, cleansing it by the laver of water in the word of life.' Again, he calls the 'laver of water,' the 'laver of regeneration, and renovation of the Holy Ghost,' alluding manifestly to our Lord's words (John, iii.), and thus clearly establishing that the regeneration, without which no one can enter into the kingdom of God, is baptism by water. 'Not,' he says, 'by works of justice which we have done, but according to His mercy he saved us, by the laver of regeneration, and the renovation of the Holy Ghost.'"—p. 125.

Now, putting aside the question of when the soul is first joined to the body, on which subject Holy Scripture is silent, I am quite prepared to admit simply and implicitly the authority of the texts quoted. I do not deny that baptism was by water, nor that baptism is one of the sacraments "generally necessary to salvation;" but all these texts involve one condition, viz., the *possibility* of baptism. This, I think, must be admitted *primâ facie*, and I object to apply such texts to cases for which we have no shadow of proof that they were intended. It appears to me that the blessings of baptism, and the penalties for its neglect, can be and were intended only to apply to those children whose baptism was possible. The duty and the power must be correlatives. Now of children dying in utero nothing whatever is said in Holy Scripture, yet my reviewer deduces, from the texts above quoted, the doctrine that the souls of such children are lost.

Of course, if the reviewer had stated that the operation of craniotomy had been prohibited by the Roman Catholic Church, there would have been no necessity for argument[a]. The members of that Church would feel bound by its decision, and it would have been no business of mine to contest the

[a] I do not pretend to determine the exact authority of the following extract, although it is not improbable that it may have been the "exciting cause" of the review:—"Sedulam operam dent sacerdotes, ut quantum poterunt, impediant nefandum illud scelus quo, adhibitis chirurgicis instrumentis, infans in utero interfici-

point; but as he has made it depend upon reasoning from Holy Scripture, I have felt quite at liberty to question the accuracy of his conclusions.

The teaching of the Church of England on the subject of baptism is to be found in her Book of Common Prayer, and is so accessible, and indeed so well known, that any detail is quite unnecessary here. She recognises baptism as one of the sacraments "generally necessary to salvation," and declares that "it is certain by God's Word, that children which are baptized, dying before they commit actual sin, are undoubtedly saved." But in accordance with her declaration that "Holy Scripture containeth all things necessary to salvation: so that whatsoever is not read therein, nor may be proved thereby, is not to be required of any man that it should be required as an article of the faith, or be thought requisite or necessary to salvation:" not having found any expression as to the result to those dying unbaptized, when baptism is impossible, she is silent, content to leave their future lot to the loving-kindness and tender pity of Him who died for all.

Morally and theologically, then, the case stands thus:—My reviewer contends that destroying the child in utero is murder. I have proved, on the highest legal authority, that this stigma is unjust, and that it does not come under any true definition of murder, inasmuch as it involves no malice; that it is even something less than justifiable killing, inasmuch as the child's death is inevitable without our interference; we do but hasten it.

Again, he maintains that baptism being a sacrament essential to salvation, all children dying or destroyed in utero are lost. I say, on the contrary, that his authority from Scripture fails, inasmuch as in the cases quoted baptism was possible; whereas in these it is not.

III. Now let us turn to the obstetrical side of the question; and our first endeavour must be to recognise, and in recognising to define, the limits of the responsibility devolving upon the accoucheur, both as regards the child and the mother.

No man possessed of common human feelings, particularly if he have children of his own, can fail to feel the utmost tenderness towards the feeble being he is to usher into the world. Even if we leave the soul out of consideration, the fact

tur. Omnis fœtus quocunque tempore gestationis editus, baptizetur, vel absolute, si constet de vitâ; vel sub conditione, nisi evidenter pateat eum vita carere."—*Decreta Synodi plenariæ Episcoporum Hiberniæ, apud Thurles habitæ anno* 1850. Article "De Baptismo," p. 20.

of a human life being involved will be sufficient to insure the utmost efforts of skill and attention. The accoucheur is responsible that no hygienic arrangement shall be neglected, no errors of management committed, and no assistance withheld, either during the labour or afterwards, which may tend to secure life and health to the child. The records of modern practice show how steadily this object has been kept in view. The improved management of the first stage of labour shortens the duration of the second, by the prolongation of which the life of the child is threatened. The action of the second stage, when too tedious, is often quickened by the ergot of rye, and we are saved the necessity of a recourse to instrumental assistance. And when we are obliged to assist in this way, I am certain that in every case where there is a possibility of success, those instruments are preferred which involve no necessary injury to the child. A comparison between the relative frequency of operations with the forceps and crotchet at present and in former times, both in this and other hospitals, will bear out the truth of this remark. And in all the modern text-books this rule is emphatically laid down. For myself I can truly assert that I have always taught this in my lectures and in my writings, and in practice I have rigidly followed the same principle, that the child is to be saved, if possible. I therefore demur to the reviewer's sweeping assertion, that we evince great indifference to infantile life. The saddest consummation of an anxious attendance is the necessity of *hastening* the death of an unborn babe, in order that the mother's death may not be thrown upon us also.

But although the reviewer says little about it, we must not forget that we are equally responsible for another life, the mother's, and that of immeasurable present value to her family and to society; and special precautions are accordingly taken. Much of the care to which I have alluded is equally for the benefit of the mother, and if some risk be occasionally incurred to secure a living child, extraordinary care is taken to render that risk as small as possible. The responsibility does not terminate with delivery, but extends until complete recovery. For one moment just look at the interests involved in this recovery. The husband, whose happiness is bound up in the life of his wife, and who has intrusted that to us; other children, it may be, whose well-being is dependent upon their mother; to say nothing of a circle of friends and dependents who look to her for comfort and guidance; and all these interests now hanging in the balance, form very onerous items in our calculations of responsibility.

Such responsibility we incur every day, in every case, but it is only felt as a heavy burden in difficult or impracticable cases. Then we feel that there must be some limitation to it, inasmuch as our power is restricted: we do not hold life and death in our hands—we do not determine the character of the labour. What, then, are those limits beyond which our responsibility does not extend? It appears to me, that *our responsibility is exactly in proportion to our command of the essential conditions of success.* Not that we are responsible for success, for that depends upon a Higher Power; but that, as far as we are concerned, all the means of success within our control shall be applied in a manner and at a time most likely to insure it. Now the first and most essential condition, both for the mother and the child, is *timely delivery*, and if we have the power, we are responsible for its exercise in such a manner as will benefit both. Suppose, for example, a case of powerless labour, suitable for the forceps; if we carelessly allow the labour to continue so long as to involve the death of the child, we are as much responsible for its death as if we had recourse to destructive instruments, instead of delivering it by the forceps.

But if it be *physically* impossible that the child can be born alive, then I hold that the accoucheur's responsibility for its life ceases entirely,—no blame rests upon him for its death. Nor do I believe that he can be held responsible in the ordinary meaning of the term, although, in the case supposed, he has to hasten the child's death to secure another life, for which, so far as delivery is concerned, he is unquestionably, and in the fullest sense of the word, directly responsible.

For I would beg you to consider seriously the different position in which we stand as regards delivery, towards the child and towards the mother. Delivery is essential to the safety of both: it *may* be incompatible with the life of the child, but it *can* always be accomplished before the life of the mother is seriously compromised. Having, therefore, the command of the essential condition of success, the full responsibility rests upon us, that so far the mother's life shall be insured; and as all responsibility for the child has ceased, we say that the mother becomes our sole object.

It is the due appreciation of these relative responsibilities in difficult cases that distinguishes the wise and experienced accoucheur: he preserves a just equipoise between them so long as it is possible to fulfil both, and recognises the proper moment when one ceases. *One*, I say, not *either:* for I protest, as strongly as my reviewer, against the notion which he

attributes to *us*[a], that we *choose which of the two lives we shall save*, a notion as false in theory as it is in practice. No man *dare make such a choice*, for we have neither the necessary knowledge, nor the right, nor the authority, to decide which is the more important life, and best worth preserving.

And *no one ever does make such a choice.* Perhaps the least suspicious evidence I can adduce is to refer to the cases to which, in my own book, the operation of craniotomy is said to be applicable. You will find that, in all, the child is either presumably dead, or the labour is mechanically impracticable with safety to the child. So that, without hesitation or limitation, I would lay it down as a canon, that *craniotomy is never to be contemplated when a living child can, by any means compatible with the safety of the mother, be delivered, "per vias naturales,"* and upon this rule I invariably act.

This rule happily limits the number of such painful cases; yet, although not numerous, instances do occur in which I believe craniotomy to be not only necessary and justifiable but imperatively demanded, even though the child be alive, if we would not voluntarily incur the responsibility of the mother's peril, and perhaps death: and upon this class of cases I shall trouble the Society with some observations in answer to my reviewer. He especially refers to cases of mechanical disproportion from narrowness of the pelvis, and from a hydrocephalic head. Both these classes, and some others, involve merely questions of mechanical disproportion, and may, for our present purpose, be treated together; but I shall add a few words separately on hydrocephalic children.

Now in order to meet the question fairly, I shall *assume* that we have to deal with the case of a pelvis so narrowed at either brim or outlet that a living child, even aided by the forceps, cannot pass, but through which a mutilated child can be extracted, without undue risk of injury to the mother; and it matters little to the argument whether the difficulty be from deformity of the bony tissue, from a fixed irreducible tumour,

[a] The reviewer states that "this seems to have been the opinion of the French doctors who attended the Empress Maria Louisa during her accouchement, for they consulted the first Napoleon as to whether they should spare the mother or child, in case they found it necessary to kill one of them." I believe that this is about as true as the phrase attributed to General Cambronne,—"Les guides meurent mais ne se rendent pas;" or Wellington's "Up, Guards, and at them," both of which were denied by the supposed authors. In truth, M. Dubois was too experienced a man to make such a speech: if anything *like it* was made, it was, probably, a request to know whether the mother was to be *allowed to die, because the child could not be born alive.* And let me just remind the reviewer, in any case, that the parties were of his own Church.

or from excess of bulk on the part of the child. I say I must *assume*, for the sake of the argument, such a case, although I am met at the outset by the objection on the part of the reviewer, that in practice we cannot be sure of such cases, for that there is little certainty, and no uniformity, in the measurements given by authors: that, in fact, they are not agreed about the size of the aperture through which a living child *cannot* pass. This is certainly true, though the difference is not great, and it is a difficulty which would be seriously felt in many cases if we had to give an opinion, *à priori*, or before the commencement of labour. But after labour has commenced, the position of the accoucheur is quite changed, and he has acquired new and decisive means of forming a correct opinion. He can compare the size of the aperture with the size of the child's head, for they are in close apposition: he has the evidence of what hours of strong pains can do towards forcing the head downwards; nay, more, he can test the applicability of the forceps, whether they can be introduced, and whether, when introduced, he can draw down the head. With these advantages I undertake to say that no man will find any difficulty in deciding whether a patient can be delivered without craniotomy or not.

Let me now remind you of the course of a labour of this kind when left to nature. During the *first stage* no bad symptoms appear, nor for some time after the commencement of the *second*, nor is the child in present peril; but after a time somewhat varying and uncertain, indications of constitutional suffering are developed,—the symptoms of powerless labour, in short,—and from that moment the mother may be said to be in danger, which is fearfully increased by every hour's delay and suffering. In process of time the symptoms become still more formidable, and involve so much general derangement that the evil effects continue after delivery, and if this be not effected, the patient will ultimately die in a state of coma or convulsion, or, perhaps, before this final stage, the walls of the uterus may give way whilst we are waiting, and death result from the laceration. If the woman be delivered within a reasonable time after the setting in of unfavourable symptoms, they shortly disappear, and her recovery will, in almost all cases, be complete. If the labour be allowed to continue, and exactly in proportion to the delay, the recovery will be less favourable, and the danger after delivery greater, until we arrive at that point of time when delivery itself cannot save the mother. At what period of the labour the death of the child, which is inevitable, will occur, it is impossible to state

with any accuracy. It does, doubtless, sometimes take place comparatively early, perhaps before any very bad symptoms have set in; but I feel little doubt that, as a general rule, it is not until a much later period, in fact not until the mother is in imminent peril, in many cases not until the last stage.

Now, what is the right and proper thing to be done in such cases? The child we shall assume to be living, but it is physically impossible to extract it alive through the passages. The mother is in great danger, which increases rapidly, and they will inevitably both die if let alone. We may (at least for the present) dismiss the question of baptism, as that is impossible, and there are two courses open to us:—1. To wait until we may reasonably suppose the child to be dead, and then perforate and deliver, regardless of the consequences to the mother; or, 2. To perforate as soon as the bad symptoms set in, after having assured ourselves of the impossibility of using the forceps, and so secure the life of the mother. The reviewer indicates a third method, the Cæsarean section, which I shall examine presently. In our choice of these two methods the reviewer and I are at issue; the conclusions at which we arrive are diametrically opposite. He chooses the first, and rejects craniotomy so long as the child is alive. "But it will be said," he observes, "must the accoucheur fold his arms and allow both mother and child to perish, when he might, probably, save one of them? To this we answer, once more, that he cannot commit murder; that he must not do evil in the hope that good may follow; and that the medical man, like every other member of society, must be prepared to encounter in this dim world a great many calamities which he can neither remedy nor alleviate." Now I have shown that we do not commit murder. I agree fully in the rule that we are not to do evil that good may follow, but the reviewer's use of it in this place is plainly a "*petitio principii*," for I deny that we do evil, that is, morally, or involving guilt; and that "doctors have to encounter many calamities in this dim world which they can neither remedy nor alleviate," is undoubtedly true, but *is* this a case in which the doctor can shelter himself under the comfortable conclusion that "he *can* neither remedy nor alleviate it?" Is it not quite evident that his voluntarily refusing to deliver makes him an active, willing, and responsible accomplice in the death of the mother?

I have no hesitation in stating my deliberate opinion, that the second plan, which has received the sanction of the best and most distinguished men in the profession, is the right and the wise course to adopt, and the one which best adjusts and

preserves the balance of our responsibility. For, in the first place, I have proved that the destruction of a child under such circumstances is not murder, but justifiable in law. Nay, if you think a moment, one cannot say that the blame of the child's death rests upon the accoucheur at all, for that is inevitable if he do nothing. All he is justly answerable for is depriving it of life a few hours before it would otherwise cease to live. And for what? The mother is in imminent danger, and will die if assistance be withheld, but she *can be saved now.* I say, therefore, that if this assistance be not given, the accusation of murder (by omission) would come with greater force against the party who voluntarily allows the mother's life to be imperilled. Take lower ground, if you like, than the abstract question of right. Granted, if you please, that hastening the child's death is an evil: so is the death of the mother: which of the the two is the lesser evil, considering that you *cannot* prevent the first, and *can* prevent the latter?

No good man will forget that for all his deeds he is responsible to God; but for our professional actions we have the additional tribunal of professional and public opinion. Narrow the circle still further, and it is clear that each of us is specially answerable to the party who has intrusted us with the lives most dear to him. The latter has the most direct and deepest interest in both the objects of our care, and it appears to me that it is impossible to ignore *his* right to be a party to whatever decision we come to.

Suppose it to be our painful duty to announce to the husband that the labour is such that the child *cannot* be born alive, but that it must be destroyed if we hope to save the mother; nay, that if we wait until it die, the mother will only be so much the worse. Are there many husbands who would hesitate? Would not natural feeling and common sense lead him to decide that, the child's safety being impossible, the mother's safety should be secured. If this be the case, the accoucheur who refuses to act must be prepared to meet the responsibility he thus incurs towards society. Admitting fully that a man's conscience must be his guide, I do not think in a case like the present he can always be at liberty to ignore the consciences of others.

I have thus endeavoured, I hope not unsuccessfully, to define the position in which we stand as regards the mother, in cases where the child cannot be saved. I have shown that the responsibility which has ceased for the life of the child has thereby, as it were, doubled in behalf of the mother; that

quiescence on our part cannot be considered as a submission to necessity, or to the decrees of Providence; but that, whether we interfere or not, we are equally voluntary, intentional, and active agents. That in hastening the death of the child, we in no sense incur the guilt of murder, nor are we fully responsible for its death, which, with or without our interference, must have ensued; while if we, in waiting for its death, imperil the mother, we are in the fullest sense responsible for that result.

But at this point I am met by the reviewer with a quotation from my own statistics to show, that the gain to the mother is not so great after all; for that 1 in 5 die after craniotomy. No doubt this is a very large mortality; but if the reviewer had been a medical man, or if he had taken the trouble to read the next sentence in my book, he would have found it explained as in many cases the result of the doctrine he is upholding, viz., the waiting until the child is dead, and the consequent increase of peril to the mother. In many cases, doubtless, the delay is voluntary; in others it arises from ignorance on the part of the poor, so that, when assistance is procured, the patient is too far gone for ultimate safety. I should be very glad to furnish a table of cases without complication, in which the operation was performed before the patient was too far reduced; but I fear that I shall not be able to adduce many. In Dr. Collins' Life of Dr. Joseph Clarke are given the records of his private practice, and I find that he performed the operation twelve times from mechanical disproportion (including one case of hydrocephalus), and all the mothers recovered favourably; yet the reviewer specially mentions that, of the same operation performed in hospital under Dr. Joseph Clarke, 1 in 3 of the mothers died; an ample confirmation of the explanation I have given.

In Dr. Robert Lee's "Cases in Midwifery" there are eighty cases of craniotomy recorded, under similar conditions to those I have indicated, viz., mechanical disproportion without complication, although Dr. Lee was not called in many of them until too long a time had elapsed; but, even so, only 4 died, or 1 in 20. Dr. Lee's character is a sufficient guarantee that the operation was the patient's only chance, and he expressly regrets that some of them were not delivered earlier; had they been, probably none would have died.

In the record of Mr. Cross' practice there are 7 cases in which craniotomy was performed, and all the women recovered.

Dr. M'Clintock has met 5 cases in private practice in which the operation was required from disproportion, and all the mothers recovered.

In looking over my own case-book I find that I have never performed the operation in consequence of mechanical disproportion, in my own private practice; the only cases being two of excessive hemorrhage, in which, there being no doubt of the child being dead, this operation was preferred to turning; and one case of convulsions, in which the child was already dead. But in consultation I have had recourse to craniotomy in twenty cases, shortly after it became evident, either that the child was dead, or that it *could not* be born alive; of these, all the mothers recovered well. In four other cases I was called in after the labour had been so protracted that the mother's case was hopeless, and the operation did not save them; these, therefore, I exclude.

From these cases, though their number is more limited than one could wish, I think we may fairly conclude that if the operation be performed as soon as it is imperatively demanded, and before the mother is run down, it is not attended with greater danger than must always be anticipated from any great operation, for it appears that out of 124 cases, some of which were unduly prolonged, only four women died, or 1 in 31, i. e 3 per cent. Nay, more, Dr. M'Clintock showed, at a recent Meeting of this Society, that of the two modes of delivery, by the forceps, and by craniotomy, the latter, *cæteris paribus*, is the safer for the mother.

With regard to M. Debreyne's experience, quoted by the reviewer, that "it is almost always fatal to the mother," if it be more than one of the loose expressions occasionally used by writers, I can only say that it speaks volumes against M. Debreyne's practice and that advocated by the reviewer, for I have shown that the excessive mortality results from unreasonable delay.

Now let me say one word upon children with hydrocephalus. These cases come under the same law as those of which I have been speaking, i. e. the law of disproportion or of relative bulk. The reviewer declaims strongly against perforating in them, because, as he says, such children have been born alive. No doubt this is true, but the cases are few; in the greater number the child is dead, or has been necessarily destroyed. But their life or death does not determine the use of the perforator; if the head be not too large to pass through the pelvis, we should no more think of destroying the child than if it were deformed in any other way: if, on the other hand, it cannot

pass, it must be opened for the same reasons as we perform craniotomy in distorted pelvis. Probably the reviewer was not aware that such cases, when let alone, involve serious danger to the mother: yet of seventy cases collected by Dr. Keith, in sixteen there was rupture of the uterus, and death. The same result followed in five cases related by Dr. R. Lee.

So far, I have assumed that we have only a choice between the two methods of dealing with these cases: that there is no alternative but destroying the child, or allowing it to die; but the reviewer maintains that there is, and, if I understand him, that it ought in all cases to be the substitute for craniotomy. He says that "when it has been proved by *experience* and to an absolute demonstration, that a full-sized child cannot be born alive, the induction of premature labour ought undoubtedly to be adopted. The only lawful alternative is the Cæsarean section, and this itself is so formidable and dangerous, that, when it can be foreseen, and its necessity avoided by any lawful and less dangerous means, it is an undoubted duty to have recourse to them." That is, for every present impracticable labour we are to have recourse to the Cæsarean section; but for any future ones in the same woman to the induction of premature labour. I perfectly agree with the reviewer, that for all cases of obstruction for which I have recommended craniotomy, and he the Cæsarean section, premature labour ought to be advised in subsequent pregnancies, and this doctrine he found in my book, if he read it. At the same time, I cannot but congratulate the profession on finding the Dublin Review an advocate for the induction of premature labour: it is a sign of progress very encouraging to us, for the reviewer must be aware that this conservative operation was first proposed by those Protestants, upon whose alleged disregard of infantile life he is so severe; and also, that for years it was opposed in France, Italy, and Germany, by the Roman Catholic clergy. Even so late as 1827, M. Capuron, a distinguished and devout practitioner, characterized it as "Un attentat commis envers les lois divines et humaines."

Now let us consider the Cæsarean section as a substitute for craniotomy.

The reviewer bases his conclusions upon the statistics given in my book. The entire number stated is 423, of which 231 mothers were saved, and 192 lost, or about 1 in $2\frac{1}{3}$; of 238 children, 167 were saved, and 71 lost. Let me observe that, although I have collected this number, I am far from pledging myself to the trustworthiness of the persons by whom they were recorded. The incomplete account of the children also is a

great drawback, as our statistics might be altered if we knew what became of the remainder.

If we inquire a little further, we find that M. Figueira has collected 790 cases, of which 424 were fatal to the mother, or considerably more than one-half, but say 50 per cent.

Again, Dr. Arneth mentions that M. Kayser collected and analyzed 338 cases, of which 210 proved fatal to the mothers, or nearly 2 out of 3, but say 60 per cent.

Moreover, if we take the cases which have occurred in Great Britain and America alone, I find, out of 63 cases, 18 mothers were saved, and 45 lost, or nearly three-fourths, say 70 per cent. In 60 cases, where the result to the child is mentioned, 34 were saved, and 26 lost, or, 1 in $2\frac{1}{3}$.

Thus we cannot in fairness take the more favourable statistics as a ground of our proceedings: we must either strike an average, or, where that is impossible, base our calculations upon the lowest. Now, according to Figueira, we shall lose more than one-half; according to Kayser, two-thirds; and according to British and American experience, nearly three-fourths; whilst of the children we may, under similar circumstances, possibly save one-half,—I say possibly, because, as the result to many of the children was not noted, it *may* as well be less as more.

Let us go a step further. It is well known that, of late years, cases have been more carefully selected in these countries, and in many ways have been managed better by *previous preparation*, both of the patient herself, and of suitable means and appliances, which require time and foreknowledge. To show this, take the cases that occurred in Great Britain and America before 1830: 35 such cases will be found in the Table I have given, of whom 30 died and only 5 recovered, or 1 in 7: i.e. $\frac{6}{7}$ths, or 86 per cent. of the mothers were lost; more than one-half the children were saved.

So far, then, we find that a more careful analysis has not improved the mortality after this grave operation: we see that it varies from one-half to two-thirds, three-fourths, and six-seventhes of the mothers, and about one-half of the children: whilst we found that a careful examination of craniotomy reduced the mortality to 1 in 31. That is, you lose 1 mother in 31 after craniotomy, and all the children; but in the same number by the Cæsarean section, you would lose about 16, 20, 22, or 27 mothers, and save 16 children. Or, taking the lowest of these figures, and admitting for a moment the lives to be of equal value, out of 31 cases, or 62 lives, you save 30, which is exactly the number of lives that would be saved by craniotomy,

if my calculations are right. If we take the higher numbers, the saving of life will be reduced respectively to 27, 25, and 20, in 62. And, moreover, we should not forget that, whereas craniotomy is an operation of *necessity*, not election, we will have voluntarily *chosen* this operation, and have knowingly incurred this fearful destruction of mothers. To any person thus acting, the reviewer's words will cease to be ironically severe, and become simply descriptive. "And if we may sacrifice one life to save the other," he says, "if we may sacrifice the less important to save the more precious, we may, of course, occasionally kill the mother to save the child, because there are many circumstances in which the life of the latter is much more precious than that of the former."

After what I have said, I think we shall hardly be prepared to agree with the verdict of the reviewer, that if all the circumstances of both operations were compared impartially, "the advantages would remain on the side of the Cæsarean section, which is much the *easier and simpler of the two*." Let us examine a little closer into this, as bearing upon practice. One *cause* of a high rate of mortality after the Cæsarean section is, that the patients have often been allowed to remain in labour too long before the operation. One *advantage* has been—and it is essential to success—that the operator has known that he would have to operate some time previously, and has had time in some degree to prepare his patient, to secure suitable assistants, and to get ready various matters which are sure to be required. The *danger* arises, first, from the shock of the operation; second, from hemorrhage; third, and chiefly, from subsequent peritonitis, and this latter risk will be much increased by bad food, bad air, and bad nursing generally, but especially by the prevalence at the time of any epidemic.

Now, in substituting this operation for craniotomy, consider the circumstances in which we must almost necessarily be placed, and see whether they are favourable to success or not. They appear to me to combine every disadvantage of the cases of hysterotomy on record, with none of the advantages possessed by the operator in them.

In the first place, so formidable an operation will naturally be postponed to the latest possible moment, on account of its known danger, which will materially diminish the chances of both mother and child. Then, as it is quite impossible, in such cases as we have been considering, that the operator could anticipate its necessity, he will necessarily be unprovided with things requisite, and with assistants; nay, it may be night before he makes up his mind, and he may possibly be in the

country, remote from all qualified assistance. Moreover, these cases are very much more frequent among the poor than those in comfortable circumstances, and here we have combined the drawbacks of bad air, bad food, and injudicious management, with possibly a prevalent epidemic.

Under these circumstances, what will be the probable mortality? You may unhesitatingly dismiss the hope of saving one-third, or one-fourth, or even one-seventh of the mothers, and half the children; but can you, with any reasonable certainty, calculate in saving 1 in 20 of the mothers (5 per cent.), and 1 in 6 of the children; and if not, look at the unfortunate position of the accoucheur,—he has *sacrificed* so many of the mothers to save so small a proportion of the children. May we not fairly characterize this as doing evil that good, and very little good, may arise, which *we* reprobate as strongly as the reviewer.

But allow me to add that, if we are to be guided solely by the desire of delivering a living child, at whatever expense to the mother, I do not see how we can limit the operation to the cases we have supposed, viz., mechanical disproportion. There are others in which we fail in saving the child by ordinary means, where it might indubitably be born alive by means of the Cæsarean section. Take, for example, a case of prolapse of the funis, which you fail in replacing, and when turning is impracticable, and the application of the forceps impossible; the labour being natural, the mother will be delivered without risk, but the child will be dead. Now in this case, Cæsarean section would undoubtedly save the child, but *dare any one propose its adoption?* Yet the principle is the same, only pushed a little further.

The reviewer lays much mistaken stress upon the Cæsarean section being "simpler and easier," which he would not have done had his medical knowledge kept pace with his theological. In craniotomy, in the cases we have been considering, no wound or injury is inflicted upon the mother: a mutilated child is forcibly drawn through the passages, and that is all. In the Cæsarean section, on the other hand, the largest serous cavity in the body, and that by far the most sensitive to morbid action, is fully laid open, the uterus is divided, and there will be more or less hemorrhage into the peritoneum. After the operation is over, there is every probability of an attack of peritonitis from the exposure and rough contact with the serous membrane, and this disease is one of the most fatal we ever meet in practice. It must be either ignorance or folly to compare the danger of the operative proceedings of craniotomy with those of

the Cæsarean section, as regards the mother. And medical men are aware of and admit this. I know a little of foreign obstetric literature, but I cannot call to mind a single Roman Catholic writer of eminence who has recommended this substitution. I should at this moment be perfectly willing to abide by the decision of a jury of French or Austrian obstetricians of authority on this subject; and, however the question of craniotomy before the death of the child be decided, I can assure the reviewer that he will find no one in this country to take his advice about the Cæsarean section. Any one who should venture to do so would, I have little doubt, find himself put upon his defence before the tribunals of his country, and in the hands of a jury who have wives, and value them.

Allow me to add a confirmation of the opinion I have expressed, in the words of Dr. West, no mean authority, it will be admitted:—"If, then," he says, "such and so many dangers beset this operation, while the causes of that mortality are, for the most part, beyond the power either of surgical dexterity or medical skill to obviate, and some of them inseparable from those processes which needs must follow delivery, we may, I think, feel satisfied that the general rule in British midwifery which prohibits the performance of the Cæsarean section, except where delivery would otherwise be altogether impossible, rests on a far sounder foundation than that of mere prejudice, or blind obedience to the dicta of men eminent in their profession."

I have now gone pretty fully into these important questions: I have shown that hastening the death of a child that cannot be born alive is not murder, as the reviewer has been pleased to term it, but, according to the law of morals and the law of the land, justifiable and right. I have expressed my own faith in the safety of the child's soul when baptism is impossible. I have endeavoured to prove that the responsibility of the accoucheur for the child ceases when his power over it fails; but that, in the one essential particular, his responsibility for the mother does not cease, but rather augments, because that condition is within his own control. We have seen that craniotomy is not recommended for any case in which the child can be delivered alive, and that, although the mortality to the mothers is very high where assistance is deferred until the death of the child has taken place, it is comparatively small when afforded in reasonable time.

As to the alternative of the Cæsarean section, I hope I have convinced you that, whatever be its mortality, when deliberately

planned and arranged beforehand, with assistants and all the various appliances necessary, yet that, hurriedly performed, with the patient exhausted by prolonged sufferings, and the operator deprived of the advantages of due preparation, the mortality must inevitably be so fearfully high, whilst the number of children saved would be so small, that were we prepared, as the reviewer is, to sacrifice so many mothers in our endeavour to save the children, the sum total of lives saved would, at the best, not be more, but might very probably be much less than by the operation of craniotomy.

There are two or three other points of secondary importance upon which I should like to say a few words, if I have not exhausted your patience. The reviewer states that I mention, as one of the objects of the Cæsarean section, "the extraction of the child so promptly as to give it a chance of life, when the death of the mother has taken place suddenly;" and he adds, in a tone of blame,—"But he never again reverts to the subject, so far as we have been able to discover: and, indeed, the teaching of professors of midwifery in these countries has led to the horrible practice of leaving the living child in the womb of its dead mother. *A great many cases have fallen within our own observation* in which the woman has reached the end of her pregnancy, where the death was sudden, and it was morally certain that the child was alive, and yet it was left in the dead mother's womb, and buried remorselessly along with her."

The quotation from my work proves, on his own showing, that the allegation against the teachers of midwifery does not apply to all; and, from what I know of my fellow professors, I do not think that it is true of any. I believe most firmly that far less than being "*morally certain* that the child was alive" would induce every teacher and practitioner to give the child the chance of life: and I regret to see in the pages of the Dublin Review what I cannot but believe to be an unfounded slander.

But the reviewer has seen "a great many" such cases of sudden death, &c. Now as he has had free use of my statistics, I call upon him to give me the benefit of his, and to say *how many* he has seen, and *under what circumstances.* I am unwilling to say an uncourteous word of any one, but I must frankly confess that I do not believe this assertion. Sudden deaths at the end of pregnancy, or in the last two months, are very rare; the majority result from accidents, hemorrhage, rupture of the uterus, cerebral affections, or acute disease affecting other organs. Dr. M'Clintock informs me that in the

seven years he has been Assistant and Master in this Hospital, he has seen but two cases of death during pregnancy.

I myself have seen two or three women (in consultation or dispensary practice) die undelivered from hemorrhage, and two from rupture of the uterus, but no others, in twenty-six years' practice. Now, in the two latter classes of cases, the operation would be useless, for hemorrhage sufficient to kill the mother would undoubtedly destroy the child; and Dr. M'Clintock has established the fact that the child dies almost instantly after rupture has occurred. I never saw a woman die of convulsions or apoplexy before delivery; but we know that in such cases, when the life of the mother is preserved, the child is often born dead, and I think it very unlikely that it would survive the mother's death. At any rate, the stethoscope would test this, as well as in death from acute diseases; and if the fœtal heart were heard, I think it would be the duty of the medical man to propose the operation; it is clear that the decision does not rest with him. In case of accidental death from violence, I believe every one is prepared to try and save the child, and the probabilities are much more in its favour than in any of the other cases, yet the reviewer ought to know, that of all the cases of this kind on record, in a large majority the child has been found dead.

I cannot help remarking here that, not only in what relates to this question, but to all those he touches upon, the reviewer altogether ignores the husband and father, as necessary to be consulted, or having a voice in the decision. Whether the child is to be destroyed, or whether we are to wait until it dies to the peril of the mother, or whether she is to be opened the moment she is dead, is to be decided by the clergyman or the doctor, but apparently without reference to the person most deeply interested! And yet he has not only the natural right of his relationship, but legal power: for Dr. Lever recently mentioned that he had consulted Dr. Alfred Taylor to know "whether he would be justified in performing the operation without the consent of the father, as it appeared unjustifiable homicide to allow the infant to die?" Dr. Alfred Taylor gave his opinion that, in law, the infant belonged to the father,—the infant, "with the life thereof;" and that if Dr. Lever touched it, even to rescue it from death, an action would lie against him. The father in two cases had refused Dr. Lever permission; and in this country although there is a strong feeling against burying the child in the womb of its mother (a distortion, probably, of the true view), yet I have known permission to extract it refused until it was alto-

gether too late. I confess that, although wrong, one can make much allowance for the feeling which objects to the mutilation (as it would appear) of a wife, instantly after death, and in fact before the husband had been able to realize his loss.

The "moral certainty" of the reviewer seems to me very easily acquired, if he believes all the stories he quotes from M. Debreyne of children delivered alive by the Cæsarean section, after five, twenty-four, forty-eight hours, and three days, or even after the interment of the mother. It would take us too long to examine into the evidence of such miraculous cases, and I, for one, object to take them on M. Debreyne's authority. The reviewer does not tell us the date of his book, and I confess I have not met with it. The position he holds seems equally indefinite; he is "Professeur particulier de Médecine pratique, Prêtre, &c.," whatever that may mean; but it would require a very weighty "Professeur particulier" to justify the demands he makes upon our credulity.

Again, the reviewer "reprobates in the strongest terms the language of Dr. Churchill, who confounds the induction of premature labour with the procuring of abortion." Begging the critic's pardon, I do no such thing; I couple the two together, certainly, but they were obviously intended to apply to different cases. If, when the reviewer was so shocked with the paragraph in the chapter on Cæsarean section which he quotes, he had turned to the chapter on induction of premature labour, where the details are given, he would have read thus:—"In the cases I have supposed, the safety of the child is the great object of the operation: and they are limited, therefore, to those patients in whom the pelvis, though deformed, is still large enough to permit the passage of a *viable* child. But there are cases where the *distortion is so great as to render the passage of a seven months' child impossible*, and others still worse, *where no reduction of the child's bulk will enable it to pass.* I do not see why abortion should not be induced at an early period in such cases. The life of the child must inevitably be sacrificed, and the safety of the mother alone regarded; and surely, after the calculations I have adduced, it cannot be pretended that Cæsarean section, the *alternative* in these cases, offers such a chance to mother and child as would justify our preferring it." I am sorry that the reviewer should have wasted so much virtuous indignation, but it is his own fault. I did not, and do not, propose the induction of abortion as a substitute for premature labour, but in cases in which premature labour, when the child is viable, would be of no use. In those very rare cases of extreme distortion, or after the patient has re-

covered from the Cæsarean section, performed for extreme distortion; I do say that, to save the mother from the excessive risk of the latter operation by one from which she runs no risk, would be more justifiable and better practice than to allow her to go to the full term. The reasons I have already so fully given apply equally to these cases, so that I need not enter into them again. I do not believe that we endanger the soul of the child; and I have no doubt that the mother's safety will be more fully insured than by any other mode of treatment.

I fear that I have exhausted the patience of the Society, but as the question has been brought forward with great show of authority, I felt that I should be in some sort shrinking from a duty which I, as Professor, owe to the junior members of the profession, if I did not state fully and freely the grounds on which I and others dissent from the conclusions of the Dublin Reviewer, and the reasons for the practice which I and others have recommended.

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Art. II.—*A Case in which it was found necessary to tie the Femoral Artery for the control of Hemorrhage occurring during Amputation of the Leg.* By S. Henry Hobart, A. B., M. B. T. C. D., M. R. C. S. E., Medical Officer, Cork Dispensary.

In November, 1856, Mr. M'C., while superintending the working of a threshing machine, had his leg caught in some of the wheels, in consequence of which he sustained a severe compound comminuted fracture of the right leg. The fracture extended into the ankle-joint, and so severe was the injury that my father, who saw the case next day, strongly urged the necessity of primary amputation, but this the patient would not submit to. He was called to see the case again after some weeks, when diffuse inflammation had set in: the entire limb was enormously swollen up to the groin, being hard, and pitting on pressure. Extensive suppuration supervened in the leg, but no abscess was formed in the thigh; by-and-by the swelling in the thigh began gradually to abate, and even the leg took on a more healthy action. After a long struggle, and being on several occasions reduced almost to death's door from exhaustion and suffering, he at length came to Cork, September 10, 1857, for the purpose of submitting to amputation.

A probe can now be passed into the ankle-joint through several sinuses, and strikes against denuded bone; none of the

sinuses extend upward into the soft parts of the leg; there is a cicatrix of an incision along the line of the fibula, where an extensive abscess had been freely laid open, reaching almost to the knee, about which a good deal of hardness exists, there is no trace of suppuration going on in the calf, but, on the contrary, all disease seems now limited to the ankle-joint, which, however, is hopelessly disorganized: the man's general health is excellent. Accordingly, on the 18th of September, my father proceeded to operate. In cases where he has amputated the lower extremity, for some years past I have been in the habit of compressing the femoral artery with the thumb where that vessel passes out over the pubis; in this case, however, I found there was so much thickening of the areolar tissue, the result of the former diffuse inflammation, that it was impossible to command it with sufficient certainty; a tourniquet was accordingly applied over the middle third of the thigh; a firmly rolled bandage, which we have always found preferable to the ordinary pad of the tourniquet, was placed across the vessel, over Hunter's canal, and the instrument was left loose until after the incision through the integuments, so as not to induce congestion of the veins. On making this incision, however, and dissecting up the integuments, the amount of venous hemorrhage was extremely great. The pad being now carefully adjusted, the tourniquet was firmly secured, and a circular incision carried through the muscles. In cutting through these it was evident that they had, in some places, undergone considerable changes, being hardened in structure, so as to resemble that of a fibro-cartilaginous substance. The gushes of arterial blood from all parts of the wound were very severe, indeed the tourniquet appeared to have no command whatever over it: on examining the position of the pad, it was found to be excellent, and a strong man, being directed to tighten the screw, was unable to give it more than a slight turn, and that without any advantage. Meanwhile, I followed the knife with my hand, compressing the cut surface so as to control the hemorrhage: the catlin was then passed into the interosseous space, when a gush of blood took place, far more severe than all the others combined. This, however, was also temporarily checked by a finger being pressed over the bleeding vessel; a retractor being now applied, the bones were quickly sawn through, and both hands being again applied, kept the bleeding somewhat in check. On lifting one finger at a time, the bleeding vessels were brought into view, and my father proceeded to tie them; but so soft was their tissue, as also that in which they were imbedded, that if even a slight degree

of traction was applied to the tenaculum, it immediately tore away, and this was followed by an increase of hemorrhage. By care and patience several vessels were now secured, though some of those which appeared to have been sound would again bleed, as if the ligature had been disturbed by some spasmodic twitching of the muscles in its immediate vicinity, and meanwhile a very large quantity of blood was lost. On attempting, however, to secure the interosseous artery, the hemorrhage became seriously alarming; two or three attempts were made to take up what appeared to be the bleeding orifice, but no hold could be taken of it by the tenaculum, as it tore through the tissue as easily as through a mere clot of blood. My father now endeavoured, by grasping a large mass, to obtain some hold, but on tying the ligature it immediately cut through with scarcely any resistance, while at the same moment the hemorrhage became much more violent than ever. On now pressing my finger on the point from which the blood issued, it passed, with very little resistance, to the extent of two inches into the interosseous space, and by keeping it there, and compressing the face of the stump with both hands, I was enabled to hold the hemorrhage in tolerable check.

My father now determined to tie the femoral artery, and, with the assistance of Dr. Bullen, who came in at this stage of the case, he proceeded to cut down to that vessel in Scarpa's space; fortunately the vessel was immediately found, but some difficulty was experienced in passing the ligature round it, in consequence of the dense nature of the areolar tissue of the thigh; five minutes, however, in all, were scarcely occupied in this operation, and it was gratifying to find that the hemorrhage was perfectly restrained. The man had meanwhile suffered terribly from the loss, and, though previously a strong plethoric person, he was now completely blanched, and complained of that horrible sense of prostration so characteristic of severe loss of blood. After allowing the man to remain on the table for upwards of an hour, and administering stimulants with a liberal hand, it was thought safe to remove him to bed. He was accordingly raised by four men, and, being carefully kept in the recumbent position, was carried thus into the next room and laid on the bed; but though this was done with the utmost caution, he was no sooner laid on the bed than he fell into a profound state of syncope, and it was only by frequent dashes of water on the face and chest that he was eventually roused. His condition was now most precarious, but by the liberal use of opium, wine, and broth, he quickly rallied.

19th. Wonderfully well. The limb or stump, which has

been enveloped in flannel, is natural in temperature: the patient had a good deal of sleep during the night, and now complains of no pain or uneasiness; to continue the opium, &c.

20th. Doing well; no new feature in the case. 10 o'clock P. M., a sort of tremor, not amounting to a rigor, occurred.

21st. Looks well and cheerful. On removing the suture by which the wound in the thigh had been closed, a small quantity of dark-coloured pus escaped

22nd. Stump dressed to-day; the entire surface is suppurating freely, and is quite red and vascular, with no appearance of slough. It should be mentioned that no attempt was made to obtain union by the first intention in the stump, as the inelastic nature of the soft parts rendered it impossible to bring them together.

23rd. A large discharge of ill-coloured pus from the wound in the thigh; bowels constipated; to have aperient mixture.

24th. Stump dressed, looks well; granulations springing up everywhere, even on the surface of the bones; discharge from thigh as yesterday.

25th. The discharge from the thigh is now quite healthy; there is an abscess apparently within the sheath of the sartorius as it evidently follows the course of that muscle both upwards and downwards.

27th. The ligature came away to-day; a slight tinge of blood followed in the discharge; stump granulating luxuriantly, and has all through shown a high degree of vascularity.

28th. 5 o'clock A. M., severe arterial hemorrhage occurred; on my father's arrival he found the blood still escaping, but not as freely as it had done, and on applying a cloth wet with cold water it completely ceased, when further interference was postponed; the quantity of blood lost at this time was about six ounces. 1 o'clock, P. M., just before the hour for meeting at the patient's house, a return of the hemorrhage occurred, but this was small in quantity, and did not continue.

These gushes of arterial blood caused no small fear that, though the ligature had cut through the femoral, that vessel might not have been perfectly united, and that it might have been the source of the hemorrhage. On consultation, however, it was argued that if the blood came from so large a vessel, it would scarcely be so easily restrained, the wound being merely covered by a bit of lint spread with Turner's cerate, and this retained in its position by small strips of adhesive plaster; while, on the other hand, the fact of an extensive abscess existing rendered it possible that the blood might have another source, namely, the rupture of some small vessels

into the sac, and the circumstance of the abscess being situated within the sartorius rendered it more likely that hemorrhage might occur, as one of the muscular arteries, even if not hypertrophied (which it probably would be in the present case) would be quite capable, if lacerated or laid open by ulceration, of affording the amount of blood which had as yet been lost: the case was accordingly closely watched, so that if the hemorrhage became alarming and proved to be from the femoral, the external iliac might be tied; and meanwhile the dressings were not removed, for fear of inducing a return of it.

29th. No return of hemorrhage; but a discharge of seropurulent fluid has been escaping during the night.

30th. No hemorrhage since. Dressings removed; a great quantity of pus mixed with clots of blood was evacuated; this amounted to about 12 or 14 ounces, but no fresh hemorrhage occurred. It was now quite obvious that the idea suggested at the consultation was perfectly correct, and that the blood came from some small vessel within the abscess, for the orifice of the abscess and that from which the ligature had come away were quite distinct, though not more than a quarter of an inch asunder, while all the blood was observed to escape from the orifice of the abscess, and to be mixed up with the pus, while from the track of the ligature a mere drop of healthy pus escaped, which was not even tinged with blood. The abscess being now evacuated, a many-tailed bandage was applied about the thigh, which afforded much comfort to the patient.

October 1st. The abscess did not contain more than about three ounces of matter to-day, but this was pretty deeply stained with blood.

2nd. About one ounce of pus to-day, slightly tinged.

3rd. The quantity of discharge still less to-day.

7th. Owing to the manner in which the amputation had to be concluded, in consequence of the hemorrhage, and the fact that the soft parts did not readily retract at the time, the bones were found to have been rather long, and it was now necessary to remove portions of them; the abundant hemorrhage from the slight wounds necessarily inflicted on the soft parts proved their high degree of vascularity.

9th. No discharge from the thigh since the 7th, when it was very slight. Stump healing.

From this date everything went on favourably, and in November the patient returned home, with the stump all but healed. The principal points worthy of further comment in this case appear to be the profuse hemorrhage occurring dur-

ing the operation, and the effect of the tying of the femoral artery on the reparative process in the stump. The result of the form of diffuse inflammation was, no doubt, the principal cause of the hemorrhage, for I have already mentioned that the femoral artery could not be commanded in the groin, owing to the dense and thickened state of the areolar tissue; and the same condition existed throughout the entire thigh, and must have been the cause of the tourniquet failing to compress the artery; that the same condition existed in the leg also, as in the thigh, and that this inelastic, unyielding state of the tissue caused the tenaculum and the ligature so easily to tear through them, I have no doubt; although the leg, on being examined a day or two before the operation, communicated the idea of being in a tolerably healthy state; but this was probably caused by the fact that the patient had been assiduously rubbing the limb with a liniment, and, while not employed in this way, he had it carefully and firmly bandaged. That the bandaging had the effect of giving a soft, healthy feel to the limb, by causing absorption of at least the serous effusion, was subsequently proved by the application of the many-tailed bandage to the thigh, as in a few days it almost completely removed the hardness previously existing, and the limb, which had until then been of much larger diameter than the other, was, with equal quickness, reduced to a much smaller size.

The satisfactory process of healing was also very remarkable under the circumstances, which were peculiarly unpromising. Thus we had, first, the general circulation reduced to the lowest possible standard at which life could be sustained. 2nd. A limb in a decidedly unhealthy state from the result of old inflammation. 3rd. This was now deprived of its proper share of this scanty supply of blood, by the tying of its main artery, while the languid condition of the circulation must have rendered it less capable of dilating the collateral vessels. And, 4th, in this state, two formidable injuries, that on the face of the stump and that over the femoral artery, had to be repaired, whereas for this very reparative process a much larger supply of blood must be necessary, than for the maintenance of an uninjured part. Under these circumstances everything prognosticated the high probability of gangrene setting in, but yet, on the third day, when the stump was dressed, the entire surface presented a highly vascular condition, discharging a fair quantity of healthy pus; nor do I remember ever to have seen a wound in which more healthy granulations sprang up, or in which, altogether, a more vigorous process of repair was carried on.

## Art. III.—*On the Spider's Web, as a Tonic and Febrifuge.* By J. Harvey, M. D.

The web of the spider is pretty generally known as an external vulnerary, acting—as most persons would probably think—merely mechanically (as the fur of a hat does) when applied to a cut or a wound; but the use of the web *in*ternally is comparatively little known in these islands, although mentioned in some old medical authors, and with encomiums. These encomiums, however, were so loosely and indiscriminately given to a variety of remedies or agents, as not unfrequently to excite ridicule on the part of some persons; and, on the part of others, doubt and neglect.

The spider and its web are mentioned as of considerable medical efficacy in a very elaborate Dispensatory[a] of the late Dr. James[b], first proprietor, not (as some state) the real inventor, of the celebrated antimonial powders which are still sold under his name. But a more modern author, and one more to be relied on, Dr. Robert Jackson, has given a striking and bold testimony to the value of the spider's web, when exhibited in some cases of ague, and in certain stages or states of typhus fever, &c.

The late Dr. Robert Jackson was connected with the British army for about half a century, was known as an active and able inspector of military hospitals, and held for many years the situation of chief of the medical department of the army in the West Indies. He has given the results of his observations and experience in different valuable works. In his work on Fevers he thus alludes to the exhibition, as a remedy, of the spider's web:—

"I think I may venture to say, that the cobweb prevents the recurrence of febrile paroxysms more abruptly, and more effectually, than bark or arsenic, or any other remedy employed for that purpose with which I am acquainted. The cobweb [however] was rarely given before the subject was prepared by bleeding, emetics, or purgatives; and given to a subject *so* prepared, it seldom failed to effect a cure comparatively permanent: relapse, or conversion into another form of disease, being, upon the whole, a rare occurrence where the disease had been suspended by this remedy. If it was not given until the paroxysm was advanced in progress, the symptoms of irritation, viz., tremors, startings, spasms, and delirium, if such existed, as symptoms of febrile action, were

[a] The New English Dispensatory. [b] Ob. 1776.

usually reduced in violence; sometimes entirely removed. In this case, sleep, calm and refreshing, usually followed the sudden and perfect removal of pain and irritation. Vomiting, spasms, and twisting in the bowels, were also usually allayed by it: there was no effect from it where the vomiting or pain was connected with real inflammation or progress to disorganization. In cases of febrile depression, deficient animation, and indifference to surrounding objects, the exhibition of eight or ten grains of cobweb was often followed by exhilaration; the eye sparkled; the countenance assumed a temporary animation; and, though the course of the disease might not be changed, or the danger averted, more respite was obtained from a pill of cobweb than what arises from or belongs to the action of wine, opium, or anything else within my knowledge."

Having alluded to Dr. James and his Dispensatory, I may proceed to give *his* statements, which seem, in part, well founded; while a portion may well be rejected as fabulous. The more sober matter runs thus:—"The country people have a tradition, that a small quantity of spider's web given about an hour before the fit of an ague, and repeated immediately before it, is effectual in curing that troublesome, and sometimes obstinate distemper. This remedy is not confined to our own country, for I am well informed that the Indians about North Carolina have great dependence on this remedy for agues, to which they are much subject; and I am acquainted with a gentleman long resident in those parts, who assures me he was himself cured by it of that distemper. And, indeed, experience confirms the efficacy of this medicine in the case of agues."

Some authors have thought that the *black* spider and its web are more to be regarded for efficacy than other kinds, and do not omit to note, viz., "which may be found in cellars, barns, and stables." However, it is in the account of the *common* spider (not in the account of the black spider), that Dr. James gives the above information, while, under the paragraph *Araneus niger*, or black spider, he thus writes:—"This spider is common in woods, thickets, and pastures. Among the approved remedies of Sir Matthew Lister, I find that the distilled water of black spiders is an excellent cure for wounds, and that this was one of the choice secrets of Sir Walter Raleigh." Many will, doubtless, receive even this with some hesitation, but it is more likely to have *some* foundation than the following quotation, taken from the article on the common spider in the same Dispensatory:—"The common spider is said to avert the paroxysms of fevers, if it be applied to the

pulse of the wrist, or the temples; but is peculiarly recommended against a quartan, being enclosed in the shell of a hazel nut."

I presume by the words "*enclosed in*" was meant, covered by—held to the place by means of—a hazel nut. These are curious statements, and may well elicit the well-known words of Shakespeare, in "Hamlet:"—

> "There are more things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy."

However, there is authority enough to challenge further investigation. Eberle, the American physician, if I recollect rightly, in some of his medical writings seems to have confidence in the influence of the spider's web on the nervous system. And again, I may allude to Dr. Robert Jackson, where he intimates the remarkably tranquillizing effects of spider's web in a case of desperate asthma. The dose in *this* case was 20 grains at bed-time; but the general dose is from 5 to 20 grains, once, twice, or thrice, daily.

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Art. III.—*The State of the Medical Profession in Turkey.* Part II. By R. F. Foote, M.D., Constantinople; Member of the Imperial Medical Society of Constantinople; lately 2nd Class Staff Surgeon, Her Majesty's Service, attached to the Army of his Highness Omar Pasha, serving in Anatolia, Roumelia, and the Crimea, during the Russian War 1855–56; formerly Physician to the Norfolk County Hospital for the Insane, &c., &c.

(*Continued from* vol. xxv. p. 66.)

The regulations of Turkish military hospitals as to diet were, that each patient, when admitted, should receive such as the physician under whose care he was placed thought fit, and that, when he recovered, he should be placed upon full diet during three days, and then discharged as cured, so that if it appeared to the medical officer, on the admission of a patient, that full diet was absolutely necessary, he dare not order it unless he ran the risk of incurring censure from the Hakim Bashy, or Chief Physician. On the other hand, if he demanded a consultation on the case, he might be certain that the result would be settled according to the opinion of the director of the hospital, who felt that the lower the diet was, the cheaper the institution would be conducted, and the larger number of patients he would have supported at a cheaper cost. And in a country where fatalism influences every act of the

superior or governing part of the population, it gave a ready and often subtile pretence to the subordinates for neglect in complying with the special orders of the physician.

However, much unpleasantness arose between ourselves and Saleh Bey upon this subject, who considered that whilst soldiers were ill, they could, under no circumstances, have full diet and ordinary clothing, so that patients were often obliged to remain many weeks at the tent hospital, dressed only in the thin cotton shirt and drawers, with the long dressing-gown, the ordinary hospital dress. Several cases of bronchitis and diarrhœa, I believe, occurred in consequence, and daily disputes arose as to the quantity of rations supplied.

I was told, when I first went to Varna, that the following were the rations for patients in the hospital; that I was at liberty to order any article of diet I thought proper, with the exception of wine, beer, and spirits; and that my orders would be punctually obeyed; but I soon found that if I demanded any extra, some other article was subtracted from the rations, and had I required anything which could not be obtained from the farm of the manager, something else was substituted for it.

The daily supply was—

| | Bread. | Rice. | Meat. | Grease. |
|---|---|---|---|---|
| Low diet, . . | 4 oz. | 5½ oz. | 1 oz. | |
| Half diet, . . | 11½ oz. | 9½ oz. | 5½ oz. | 1 oz. |
| Full diet, . . | 22½ oz. | 10½ oz. | 11 oz. | 1 oz. |

The rice and meat were made into soup, and the bread given in the ordinary state.

For each patient a certain allowance of olive oil was issued for supplying light during the night, but if it were necessary to place two patients in a room capable of holding ten men, from the existence of any contagious disease, &c., no Turkish rule could be found to meet the peculiar case. There being two men in the ward, the allowance was one drachm for each man; no more could be obtained or given unless by special reference to the head-quarters at Eupatoria to the Hakim Bashy there. By the time that a communication had been made, the patients might be dead and buried; and on receiving the answer, it would most certainly be "bacalum." If the question were still persevered in, after two, three, or four months the matter would be referred to the Medical School at Constantinople, which would reply, after several months' continued letters of application—many evasive replies being sent, &c.—"bacalum." In a few months the matter would be settled. The Hakim Bashy at Eupatoria would be summoned to appear at

Constantinople to give his opinion. He would, perhaps, after further delay, think it convenient to visit the sublime city, when he would find that the members forming this "august assembly" were taking their "kief" on the banks of the Bosphorus during the vacation. The Hakim Bashy must remain for several weeks at least away from his duties, until this question could be discussed. In the meantime, hundreds of men might have been dying from neglect, or from want of the provision demanded.

In speaking of olive oil for light, let it not be understood that this was the only anomalous point in the regulations which struck me; there were others, of greater importance. The supplying of extras in addition to the half diet, the substitution of various articles of food, such as "pilaff," "mahhaléby," various vegetables, &c., were only obtained by absolute demand and after repeated contests.

A regulation existed at the military hospitals that each patient on his admission should receive a bath; that his clothes should be packed up; his money taken care of by the "boulikemeny," or clerk of the hospital; and should the unfortunate patient die, the money and other valuables become, as a rule, the property of the "Mire Alli," or colonel of the regiment.

Although the general idea is, that Turkish baths are highly beneficial in their effect upon the human constitution, I am obliged to confess that on many occasions I have seen very evil consequences arising from the relaxing effect produced by them, and I question whether we may not attribute the premature shrivelling and appearance of decay of the Turks to the improper use of the vapour bath.

I have repeatedly seen patients die immediately on their leaving the bath-room, and it was found necessary to interdict the indiscriminate use of the Turkish bath to patients on their admission.

For a full account of the baths at Constantinople I must refer to an excellent account lately published in the "Presse Médicale d'Orient," written by Dr. Milingen, and shall content myself with giving a general description of the bath from "Constantinople of To-day," by Theophile Gantier, translated from the French by Robert Howe Gould, Esq., M.A., because the general description which he gives not only applies to Constantinople, but to nearly all the towns in Turkey which I visited on the Black Sea. He says:—

In the Orient, where cleanliness of person is among the first obligations of religion, the baths have preserved all the luxury of both the Grecian and the Roman periods, and are

superb edifices of the loftiest architectural pretensions, with cupolas, domes, and columns, enriched with marble and alabaster, and displaying great varieties of colour and design, while they are thronged with armies of attendants, whose various offices recall the ancient time already named, and carry us back, in imagination, to Rome and Byzantium.

A large hall opening upon the street—the doorway of which is closed only by a piece of tapestry—receives the visitor on his entrance. Near this doorway, the master of the bath is seated, having on one side the till, into which he drops the money received as the price of the bath, and on the other a sort of chest, in which he deposits the watches, money, and other articles of value left with him by the bathers on their entrance.

Around this hall, at a temperature nearly the same as exists externally, run two raised galleries, supplied with camp beds; in its centre gushes a fountain, whose spray floats in the air or sparkles upon the marble floor.

Around this fountain are ranged pots of basil, mint, and other odoriferous plants, of which the Turks are so particularly fond.

Cloths of white, blue, or parti-color hang upon cords or are pendant from the ceiling, recalling the flags and banners in the arches of Westminster or the Invalides.

In the beds, smoking, sipping coffee, drinking sherbet, or sleeping, wrapped to the chin, the bathers, that is, those who have bathed, await the moment when perspiration shall have ceased sufficiently to permit them to dress. I was made to ascend to the second gallery by a little wooden staircase, and a bed pointed out to me; and so soon as I was disincumbered of my clothing, two tellaks twisted a white napkin around my head in the form of a turban, and enwrapped me, from the waist to the ankle, in a piece of calico, like the drapery of the Egyptian statues.

At the foot of the stairs I found a pair of gigantic wooden shoes, into which I stuck my feet, and thus equipped and mounted, I was half led and half supported by the tellaks into the second apartment, where a somewhat more elevated temperature is maintained. Here I was left for a short time to habituate myself to the atmosphere, and be prepared in some degree for the heat of the third chamber, in which the temperature is raised to 125° or 130° of Fahrenheit.

These baths differ very much from our "vapour baths." A fire burns continually beneath their slabs of marble, and the water, which is spread above them, is volatilized in clouds of

white steam, instead of issuing from a boiler in jets. These are, in a manner, air-baths, and the extreme heat induces the most profuse perspiration.

Under a sort of cupola, lighted by large panes of a greenish glass, and admitting but a vague and doubtful light, were disposed some seven or eight marble slabs—resembling tombs in form—to receive the persons of the bathers, who, extended like corpses on a dissecting-table, submit to the first process of a Turkish bath, which consists in being lightly pinched, and not so lightly rubbed and kneaded, until their persons are covered with a dew of perspiration, like that which forms outside a bottle of champagne when placed in ice.

When the pores are thus opened, and the whole frame streaming with perspiration, the bather is raised by the attendants, made to assume again his wooden shoes—without which the feet would be blistered by contact with the heated floor—and conducted into one of the niches which abound in the wall of the rotundo that forms the bathing-room.

A fountain of white marble, from which are drawn at pleasure jets of either cold or hot water, occupies each of these niches. The tellak makes the bather sit near the basin, arms his hand with gauntlet of camel-skin, and begins to "curry," first the arms, then the legs, afterwards the body, with a merciless severity, which almost draws blood, but inflicts no actual excoriation or injury.

Then from the fountain he dashes over his patient several basins of warm water, and having allowed this to partially dry, seizes him again and "polishes him off" with the naked hand, causing gray rolls to peel from the skin, in a manner astounding to a European convinced of the cleanliness of his own person.

This process is followed by a new deluge, and then by a fresh scrubbing, with tufts of hemp streaming with soap-suds. Then the tellak separates the hair, and scrubs the skin of the head; and then follows a cataract of fresh water, to prevent any determination of blood to the head, in consequence of the heat and the friction.

My tellak was a young Macedonian—perhaps of fifteen or sixteen years of age—whose skin, softened by constant immersion, had acquired a brownish tint and a fineness of polish almost inconceivable; he had no flesh left, nothing but muscle, but no lack of strength for all that.

These various ceremonies terminated, I was enwrapped in dry linen and conducted to my bed, where two youths "kneaded" me once more. I lay there for about an hour, in

a drowsy reverie, taking coffee and iced lemonade; and when I at length rose and went forth, I felt so light, so supple, so relieved from all sense of fatigue, that I appeared to be walking on air.

Having spoken of the general state of the Turkish soldiers, I must refer for further information, as to their hygienic condition, to the work of my friend and former colleague, Mr. Radcliffe, which has come into my hands since the publication of the preceding part of this article, entitled, "The Hygiene of the Turkish Army," which contains, I consider, a very able and truthful account.

I shall now proceed to consider—

1stly. The predisposing causes of the diseases which presented themselves.

2ndly. The diseases which came under my especial notice.

3rdly. The treatment found most beneficial.

4thly. The results derived, and cures effected.

The predisposing causes of the diseases which produced so great a havoc among the Turkish troops encamped at Eupatoria, in the spring and summer of 1856, must be ascribed—

1st. To the topographical situation of Eupatoria.

2ndly. To the climatic influence and the water.

3rdly. To the absence of any hygienic arrangements either within the hospital or town of Eupatoria.

4thly. To the peculiarity of the medical treatment, generally being antiphlogistic.

5thly. The placing together a great number of cases in ill-ventilated rooms.

6thly. The absence of charcoal, chloride of lime, chloride of zinc, or other disinfectants, acting as antiseptics.

7thly. The habits of the soldiers themselves, oftentimes covered with vermin, and the condition of their clothes, which were packed up and deposited in some parts of the barracks at Eupatoria for them, when recovery took place.

In considering these several questions, I deem that I shall be as fully carrying out my mission as if I were endeavouring to snatch from the claws of death several well-marked cases of pneumonia, typhus fever, or cholera.

For when we find it is calculated that 100,000 persons die annually in England alone from preventible diseases, the detailing such facts as I have gathered will be, I believe, furthering the proper object.

I joined the British Medical Staff of the Ottoman army in February, 1855, and soon after left for Eupatoria.

Having remained a short time in Constantinople, I soon learnt the truly eastern maxims—"Put off until to-morrow that which you can do to-day," "Never do that which you promise," or, as a friend of mine gives it—"Punctuality is the thief of time; procrastination, the soul of business."

I had visited the various important places in Pera, Stamboul, and Galatea, and discovered that the level, square, and plomb produced but little effect upon the mental or physical condition of the population; and, whatever the inhabitants might be in practice, they had very little of the characters of true masters of any mechanical art.

They knew how to carry heavy loads, it was true, but how to bring the rude matter into form, appeared their deficiency.

After quitting Constantinople, we arrived shortly at Balaklava, and soon after at Eupatoria, where our expected labours were to commence.

The town appeared to our view about the size of Yarmouth from the sea, the coast quite flat and sandy, and some thirty or forty vessels were lying at half a mile distance from the shore. From the eastern to the western point a distinct bay is formed; at the latter extremity was the wreck of the "Henri IV.," a French man-of-war, and between it and the other point no less than ten wrecks of vessels driven on shore during the late gale. Near the sea-shore there were several public buildings, including a Greek church, a Mohammedan mosque, two or three minarets, a large building having many pillars supporting the first floor, other public edifices of good form, with one or two small wooden piers. On a close examination I found the houses generally constructed of wood.

The Turkish soldier, drawn by conscription from some remote corner of the empire, comes to Constantinople quite a novice, and when living in peace he enjoys a tolerably idle life; he is made acquainted with his drill; no efforts are made to teach him his own language, &c., but he is made efficient to do duty in some garrison town of the empire; he receives his food and clothing with tolerable regularity, but when war comes he is oftentimes obliged to submit to great privations, and although he has bread, meat, &c., named in his rations in sufficient quantities, yet, if he gets hard brown biscuits, he must be satisfied. His pay is about twenty piastres per month, which enables him to buy tobacco in small quantities: it is equivalent to our three shillings. It often happens that the

soldiers do not receive any pay for six, twelve, and even eighteen months, but, living among the Christians, who are subject to them, they readily find some method of receiving occasional "bakshish."

Although I have hitherto spoken of the Turkish soldiers as being brought from some part of the empire, I must premise that it is understood all soldiers are Mussulmans, and so great is the fear which the Christians have of military service, that they would rather make any sacrifice than be subjected to military duties; but, in addition to the Turks themselves, during the late war several thousands of Arabs were sent by the Pasha of Egypt; also several regiments from the Bey of Tunis; the latter soldiers excited the detestation of the Turks, apparently, more than the Christians, French or English. Their religion being Mohammedan, there was a rivalry of interest and feeling. The large number of ophthalmic cases, chiefly chronic, were found among the Arabs, who are certainly as a rule less cleanly in their habits than the Turks, but, when necessity calls, make excellent soldiers. Their language is altogether different, being most guttural and harsh to the ear. Their inferior medical officers were of the same stamp as the Turkish, but, as a general rule, more intelligent. One of the surgeons, landing at Sinope from Bataim, offered himself to me as servant; he had been previously an Italian refugee, and had left the Tunitian service on account of the difficulty he found to obtain his pay; he had served in a pharmacy in Italy, and knew how to bleed, prepare medicine, &c., but was quite ignorant of any branch of anatomy or surgery.

When stationed during peace at various country districts, the Turkish soldier is enabled to indulge in a large amount of vegetable diet, and when war deprives him of his natural food, it preys severely on his constitution; and thus I think it hardly tenable that the diet of the Turkish soldier is so excellent for every campaign, for, accustomed as he is during peace to live upon a large proportion of vegetable food, when placed in a position to prevent this being supplied, scurvy makes sad havoc.

Certainly the domestic economy of a Turkish soldier is good; he thinks it no degradation to cook his pilaff himself; and the habit of making soup I think far superior to the ordinary English regimental cooking. His facility in lighting a fire is marvellous: no sooner does a Turkish regiment halt than the tents are pitched, fire-wood is quickly procured, boiling water obtained, and a dinner soon ready; whereas an English-

man will be waiting for the supply of wood, not knowing whence it is to come, while the Turkish soldier has a good fire.

The clothing, according to the regulations, is good; but during the war I saw some most wretchedly dressed soldiers at Balaklava and Eupatoria, although many belonged to Omar Pasha's picked troops. The means of transport were, perhaps, worse in the Turkish army than in any of the armies engaged in the late war.

The details in all Turkish arrangements are incomplete.

Badly clothed, and worse fed, the soldiers at Eupatoria were constantly (when we arrived) expecting an attack of the Russians, and continually on the alert against the enemy. They were frequently employed in digging trenches, making batteries, &c., to defend Eupatoria. Subjected to a burning sun by day, and to a winter coldness by night, they fell victims to the various miasmatic influences abounding in and around Eupatoria.

In examining the houses, I found them badly constructed as protectors against the cold and rain in winter, and the effect of the heat of the sun in summer. Outside each door was a heap of refuse, animal and vegetable matter, removed by the dogs, the only scavengers, or by the rains, which frequently occur. The method of heating the dwellings was by open charcoal fires, or, as they are termed, "mongals,"—not an uncommon cause of death. The apartments were overcrowded; several lived and slept in one room, and many occupied the same house; and at night they lay down in their day clothing.

There was no regular system of drainage; large cess-pools were frequently observed near the habitations; and the water-closets or privies were generally placed on the ground floor, beneath the living-room.

The supply of water was very defective and insufficient, particularly during the summer; and owing to the salt lakes in the neighbourhood, the water was quite brackish, and had a purgative effect.

The climate, being dry and exciting, produced in various diseases much apparent fever, and often deceived persons who did not thoroughly take all the circumstances into consideration; supposing that they were treating inflammatory disease, after depletion they found the patients rapidly sinking into the typhoid state, from which they could not rouse them. We found that the excitement was always followed by depression; it was the excitement of irritability, of nervous excitement rather than vascular, of asthenia rather than sthenia: and therefore, it was

necessary that much caution should be practised in the administration of antiphlogistics.

The summer heat was extremely intense, the thermometer rising at noon often to from 120° to 130° and 140° Fahrenheit; whilst the cold of winter was severe, with a flat, open, unprotected country on the north.

The means of transporting Turkish soldiers, as I have before stated, was bad. During the months of January and February, when they were left exposed on deck, in being conveyed from Varna to Eupatoria during the night, many were found dead in the morning. One could not be surprised to find at Eupatoria many patients suffering from frost-bites, whilst cholera, fever, and dysentery existed to a great extent in the summer. In the camp outside the town, containing at various periods from 20,000 to 40,000 soldiers, as well as in the hospitals, no regular system of hygienics existed, and, if possible, less prevailed in the miserable town of Eupatoria. In all parts heaps of animal and vegetable refuse were seen, and the effluvium in some parts was fearful.

The Turkish officers always provide themselves, when on campaign, if possible, with lemons and olive oil, two substances equally, I am disposed to think, guards against scurvy. The effects of sugar, coffee, and a varied diet, combining meat, vinegar, &c., are highly beneficial, even when they do not contain vegetables, provided they differ from day to day; for it is generally observed that the influence of scurvy on officers is trifling compared with that on the men. Thus in Germany, during the war between the Austrians and Turks in 1720, when the Imperial army wintered in Hungary, many thousands of the common soldiers, but not one officer, were cut off by the scurvy. This fact bears very strongly upon what I myself have noticed of the hundreds who died under our care,—in no instance did any officer die from the same disease.

The diseases which existed at Eupatoria were scurvy, remittent and intermittent fever, diarrhœa, cholera, and dysentery, carrying off upon an average 1000 per month.

During the time that a portion of our staff was retained there, from April to October, owing to the refusal of the Inspector-general to take hospitals unless they were arranged according to his Indian notions, in no case were patients placed under the treatment of the English surgeons, as he ordered that no member of his staff should give medicine to the sick; and of eleven medical officers living here during six months, 1 died from cholera, 1 from fever, 2 resigned and went to England, 1 was invalided to England, 1 to Varna, 1 died

soon after reaching Trebizond, and the rest drew on a miserable existence of inaction, scarcely one being in a state of health on leaving.

We were British officers, sent out by her Majesty Queen Victoria to assist the wretched Turks. That we should not swerve one tittle from the rules of the service appeared to be the idea guiding our chief. Owing to the difference in the mode adopted by Dr. Farquhar—who was well acquainted with Turkish and Egyptian habits, having lived several years at Alexandria,—during the same period, we not only gave medical relief to nearly 1400 sick and wounded soldiers, but we cured a vast number, and returned to the ranks of Omar Pasha's army, during August, September, and October, 343 men; while 244 convalescents were sent to the villages—men who had come to us in a miserable state of disease, wretchedness, and filth; and subsequently when a portion of the British Staff were serving in Mingrelia, it was not an uncommon circumstance for an English officer to meet Turkish soldiers who did not forget the kindness they had experienced.

Although Eupatoria is not a Turkish town, yet the principal inhabitants being Tartars, its general description, as to houses, drainage, &c., will apply to Varna.

I shall now proceed to speak of the diseases which came under my especial observation. Of the patients admitted during the whole time, 1400 were under treatment, suffering from the worse forms; the milder cases were sent to the Turkish hospital; and the convalescents to the neighbouring villages, where, by means of pure air, out-of-door exercise, and a good quantity of vegetable food, most rapidly recovered, but few died; and, did the latter occurrence take place, "Mashallah" would, perhaps, be the exclamation of "Saleh Bey," for no medical man was sent with them by the Turkish authorities.

During the three months ending November, 1855, there were admitted, under the care of the British Medical Staff, 862 patients, viz., Turkish soldiers from Eupatoria, 756; Turkish soldiers from Varna, 30; Turkish Polish Cossacks, 62; Bashi Bazouks, under Brigadier-General Havelock, 6; accidental admissions, 8. Of these, there were discharged cured, 343; convalescent, 244; incurable, 19; died 91; remained under treatment, November, 1855, 165.

Of the diseases which came under our observation, the majority were of the scorbutic diathesis, complicated, with irritation of the stomach and intestines, and affections of the liver, kidneys, and other viscera. Of 608 patients admitted into the

palace hospital during six months, 285 came entirely under my own treatment. I will, therefore, take 150 of these cases, and examine them more carefully. Of these, 101 cases sufferred from scurvy in some form; 22 were simple cases of scurvy, 50 complicated with diarrhœa, 29 with diarrhœa and other diseases[a], whilst 49 cases were not affected with scurvy,—the latter cases being chiefly admitted from the camp outside Varna, consisting of Turkish regular soldiers—infantry, Turkish Polish Cossacks, cavalry, and Bashi Bazouks or English irregular cavalry,—the aggregate number of the whole being 20,000 men, forming the army of reserve to join Omar Pasha in Asia Minor.

Thus it will appear that more than 66 per cent. of the cases admitted suffered from scurvy in some form, and, were the previous three months included, a higher per-centage would be seen to exist.

Of the diseases not complicated with scurvy, 39 were medical[b], and 10 surgical[c] disorders. Of the former, 28 were fever, diarrhœa, dysentery or cholera, 1 bronchitis, 1 phthisis, and the remainder, various diseases.

Of the surgical diseases there is nothing particular to remark, with the exception of the small number in proportion to the other cases; but I was told on inquiry that scarcely one soldier of a hundred who are wounded in action survives. I shall, however, refer to this subject hereafter.

It will be remarked, in the statement of the statistics, the absence of venereal disease to any great extent. I myself have been often surprised at the few cases which came under my observation, more especially as several of our patients had been recently quartered at Bucharest, or on the banks of the Danube. I believe that the absence of the disorder does not arise from the fact of non-exposure, but rather from the hygienic precautions of circumcision and the regularity of ablution after any excess, as laid down by their religion. On my arrival in the Crimea, when conversing with a surgeon attached to the English hospital at Balaklava, he stated that he believed that Turkish soldiers were dying in great numbers from anal syphilis.

[a] Dysentery, 8; diarrhœa and bronchitis, 8; diarrhœa and pneumonia, 4; diarrhœa and abscess, 4; diarrhœa and frost-bite, 2; diarrhœa and typhoid fever, 1; diarrhœa and hydro-thorax, 1; diarrhœa and general dropsy, 1. Total 29.

[b] Intermittent fever, 7; remittent fever, 5; typhoid fever, 5; typhus fever, 2; ephemeral fever, 1; diarrhœa, 5; dysentery, 2; cholera, 1; ascites, 1; phthisis, 1; bronchitis, 1; lichen, 1; dementia, 1; hemiplegia, 1; scabies, 5. Total, 39.

[c] Disease of the metatarso-phalangeal articulation of the big toe, 2*; gangrene of gum, 1; gun-shot wound of right thigh, ball passing through it, and lodged in outer side of left thigh, 1*; cataract, 1*; syphilis extending to anus, 1; trichiasis, 1*; frost-bite of foot, 1; fracture of radius and ulna, 1; orchitis, and stricture of the urethra, 1*. Total, 10. The patients marked thus * were operated on.

Such a disease I subsequently found very rare, as only one case came under my own treatment; and in conversing with my colleagues I did not find that they had seen many cases. Of the deaths which took place, there were 11·55 per cent. among the patients admitted from Eupatoria, and not quite 6·5 per cent. of those from Varna. The latter were sent direct to the hospital, whilst the former had been under treatment in the Turkish hospitals.

(*To be continued.*)

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Art. V.—*On the Use of the Tobacco Enema.* By R. W. O'Donovan, M. R. C. S.

Tobacco, in some form of preparation, has at different times been used either as a narcotic, sedative, emetic, diuretic, or cathartic, and I think I may add in distinctive nomenclature, a direct antispasmodic.

The diseases in which it has been most frequently prescribed are constipation of the bowels and hernia. In the treatment of the former the leaves of the fresh plant have been directly applied to the anus by the native Indian doctors, others have injected the smoke, while an infusion has been taken by the mouth or administered as an enema.

Like digitalis, tobacco labours under the questionable character of either "killing or curing," a notoriety derived equally, perhaps, from the extravagant praise of its supporters, as well as the unmerited censure of its opponents.

My own experience, drawn from the following cases, leads me to think favourably of its use. I would, however, strongly urge the following conditions, viz., firstly, that the surgeon should in all cases administer the enema himself; secondly, that he should not leave his patient until all symptoms of tobacco sickness have ceased, and reaction set in; and thirdly, never to use the drug without having a stimulant ready at hand. I always give some whiskey and water, a stimulant I think generally liked best.

I prefer giving the enema in small bulk, from two to four ounces of water, though the formula of the London College is a pint; for two reasons, first, that by not over-distending the rectum, the enema will be more certainly retained; and, secondly, for obvious reasons its constitutional effects are not likely to be so violent or long continued.

Case I.—October, 1841, I attended —— Kelegher, a poor

old man, about five miles distant from my residence, many years subject to hernia, for which he wore a truss. Latterly, however, from the weakness of the spring and insufficiency of the pad, it became useless, and he went about without giving it any support. The day previous to my visit having been labouring hard, the bowel descended to an extent more than usual. He suffered a great deal of pain during the night, both in the hernial tumour and in the abdomen. 2 o'clock P.M., when I saw him, his agony was very great, the hernia about ten or twelve inches in length. He had vomited before my visit; pulse small and quick. I endeavoured to return the hernia by the taxis, having first given him a hot hip-bath; but, failing, I determined on trying a tobacco enema before I would send him to the Infirmary, for even with assistance it would have been impossible to have operated in his wretched, dark cabin.

I prepared the enema, infusing one drachm of tobacco in about two wine-glassfuls of boiling water for twenty minutes, and lodged it merely in the rectum. I well recollect the anxiety, almost agony of mind, I suffered, watching the results. In about ten minutes I was startled by hearing "glug—glug," as if fluid was escaping from a bottle. On examining the tumour I found it reduced to half its size, and rapidly disappearing without assistance. I used a little more pressure, when the entire contents were at once got up. The sickness and nausea ceased in a short time after he got some spirits and water.

Case II.—January, 1842, I was called to see Mrs. M'Hugh, a very old woman, mother of a large family, subject to constipated bowels. She has been for three days without a motion, but is not suffering as much as might have been expected. Got calomel and jalap, with other purgatives, and repeated enemas, before I saw her. The abdomen is hard, a little swollen, with some slight tenderness. I infused about half a drachm of tobacco in a tea-cupful of hot water for twenty minutes, and injected it. In five minutes the pulse became accelerated and weakened, and in two minutes more she complained of nausea with pains through the abdomen, which were attended with the escape of flatulence, unaccompanied by any sound, and almost immediately after she had a copious motion of hard, dry fæces. She got some spirits and water, and rapidly got well, suffering some annoyance from the disagreeable smell of tobacco for a few days.

Case III.—March 13, 1843, I visited Sergeant Keenan, an old, but large and able-bodied man, ill three days with con-

stipated bowels. Abdomen swollen and tender on pressure; he got castor oil, calomel, and senna and salts, before I saw him: ordered ten grains of calomel, and a purgative enema in three hours after.

14th. Enema retained; no motion; abdomen more tender. Administered a tobacco enema, prepared with one drachm of ordinary tobacco infused for twenty minutes in a wine-glassful of boiling water. A cold perspiration broke out over his body; he began to retch and yawn; smell of tobacco strong on his breath. A stream of exceedingly foul air came away in a continuous volume, followed by large quantities of fæces. He continued sick during the day, and got punch occasionally, but was quite convalescent in two days.

Case IV.—October, 1845, I visited a poor woman suffering from constipation for three days. She took several doses of active medicine before I saw her, and also had purgative injections. I found her suffering a good deal; abdomen hard, not much swollen; pulse small and quick; her breathing hurried. I infused about half a drachm of ordinary tobacco in a glassful of water and injected it. In a very few minutes she got very sick, nausea, retching, cold clammy sweat over the face, which was extremely pale; pulse fluttering, odour of tobacco strong from her mouth. She commenced almost immediately to void fæces and urine, apparently without an effort. I gave her at once half a glass of whiskey, and repeated it in twenty minutes. She continued very weak for the remainder of the day, and was ordered an effervescing mixture, with spirits as a stimulant, but got quite well in a few days.

Case V.—October 25, 1853, I attended —— M'Corry, aged 50, who has suffered from reducible oblique inguinal hernia of the right side for some years. He was always, however, able to return it, and unfortunately neglected to adopt the precaution of getting a proper truss; the one he used being a "cast-off" one, and much worn, it did not cover the inguinal ring entirely, and latterly he seldom put it on. This morning, when lifting a "creel" of turf, he felt the intestine come down suddenly, and though he experienced considerable pain at the moment, he did not proceed to return it, but continued about his work for two hours, by which time, from the increased descent of the bowel, the pain became very severe. He then endeavoured in his usual way to reduce it, but without success, sickness of stomach and faintness supervening. I was sent for, and saw him four hours after the accident, and found him lying on the floor writhing in agony, the hernia enormously enlarged, measuring about fourteen inches from the ring

to its base, presenting the appearance of hernia with hydrocele, having about midway a well-marked line of division, as if intestine formed the superior portion of the swelling, and fluid the inferior.

Having placed his body and limbs in a proper position, I endeavoured by the taxis to return the hernial contents, but ineffectually. During my efforts he suffered great pain. Having determined to administer a tobacco enema, I infused one drachm in four ounces of boiling water for twenty minutes, and, having injected it, I recommenced the taxis. In about six minutes the constitutional effects of the tobacco became evident; the skin lost its temperature, a cold sweat broke out over the body, nausea with severe retching came on. He now bore the handling of the scrotum without complaint. The sac gradually became emptied; at first the air passed up in bubbles, afterwards more continuously, and then with little difficulty the entire contents were reduced. He got some spirits and water every twenty minutes, and rallied perfectly before I left him.

Case VI.—November 16, 1857, I attended in consultation with Dr. W. Finlay of Swanlinbar, —— Magovern, aged 76, but before this accident a very healthy man. Has had an oblique reducible hernia for several years, and used a truss, but for some few months he left it off, and merely wore a pad and handkerchief. I learned that on the previous day, when getting over a stile, he stumbled and got a severe shock, and that almost immediately the intestine protruded, but did not descend into the scrotum. Dr. Finlay saw him in the evening and ordered a hot bath, gave him an enema, and endeavoured, but without success, to reduce the hernia. On examining him I found the hernia about the size of a small egg, firm and dense to the touch, and not particularly painful. The taxis was again tried for a considerable time, but without a satisfactory result.

As he positively refused to allow an operation, convinced that, as he was never sick during his long life, his death was at hand, a tobacco enema was administered, but without a successful issue. The constitutional effects of the drug were not well marked. He became sick, but the prostration attending its administration with my other patients was absent. We waited for an hour, trusting he would allow the operation, but eventually had to retire. He died the second day.

I have thus briefly given to the profession those *disjecta membra*, scattered through my case-books. A guide for myself, they were never intended for publication. I offer them *quan-*

*tum valeat,* and as a mere *exposé* of private practice. I have intentionally avoided referring to authorities, or incumbering the article with quotations or extracts.

My remarks shall be brief. I will first observe that *all* my patients were smokers,—a circumstance which should be taken into consideration when reasoning on the propriety of administering a tobacco enema, for if in such a class of patients so great an amount of sickness follows its use, would we be justified in arguing that its effects in non-smokers would be seriously increased?

While unable to solve this difficulty, I must say, nevertheless, that from the rapidity with which these bad symptoms yield to treatment, I would not myself hesitate to have recourse to it in cases of obstinate constipation, when other active remedies had failed in affording relief.

And in hernia of long standing, particularly where the intestine is distended with air which appears to increase the resistance to reduction, an effect it certainly produced in my first and second case, I would unquestionably administer it before advising an operation, particularly in the country, where circumstances beyond the control of the surgeon often interpose to render the chance of success very problematical.

M'Corry's case was to me one of exceeding great interest, and I beg to draw attention to one practical feature connected with it. Evidently a case of entero-epiplocele, the outline of its contents was as well marked as if a cord was drawn tight across the tumour, but I must confess the diagnosis of its nature was a matter of considerable difficulty. The lower portion of the hernia presented all the characteristics of hydrocele,—nearly transparent, with a most deceptive feel of fluctuation, pyriform. One only fact prevented my committing a fatal error by puncturing the supposed hydrocele, viz., that while in bed he was able to feel the testicle of one side as distinctly as the opposite, and that no swelling existed until he assumed the erect posture. I have operated for hydrocele where the transparency of the tumour was not near so great, and the sense of fluctuation not more evident.

Art. VI.—*Some Observations on the Treatment of Small-pox.* By E. W. T. Mandeville, Surgeon, 3rd Indian Depôt Battalion, Chatham.

As I consider that any mode of treatment which would mitigate the severity and disfigurement consequent on this horrible and frightful malady must be, indeed, a great boon; and as I had an opportunity during the spring of this year, when small-pox was so prevalent in Chatham garrison, of observing the disease, I propose laying before the readers of this Journal the particular line of treatment which I adopted in all cases of small-pox, especially of the confluent form, and when unattended with other complications; and I do so with the hope that some others of the profession may be induced to give it a trial, in order to ascertain if the same favourable results will follow upon the use of a plan of treatment which has proved so successful in my hands, only one case having proved fatal out of above 30, more than half of which were confluent, and about 10 of an aggravated form, the throat being in all more or less affected, and the greater number having been subsequently complicated by the formation of numerous abscesses over the body, the face excepted. There were only a few cases in which the head or lungs were affected, but none in which the abdominal viscera became engaged.

As this paper is not intended to be an essay on small-pox, I shall merely state the usual steps in the treatment.

As is the custom in all military hospitals, fever cases are immediately admitted when they present themselves; and during the prevalence of the small-pox the first symptoms of any eruption were carefully looked for, and the more especially in the present instance, as both rubeola and scarlatina were also then prevailing; and upon ascertaining that the eruption was small-pox, the patient was removed into the hospital set apart for that disease.

The treatment up to this time was the same as for common continued fever, but I now commenced what may be termed the specific treatment. The patient was directed to take a mixture composed of 2 drachms of compound rhubarb powder, 2 drachms of tincture of hyoscyamus, and 7½ ounces of camphor mixture, in doses of two tablespoonfuls three or four times a day; but if the attendant fever was very high, there were added two ounces of the solution of acetate of ammonia to the above. This mixture was generally continued as long as the fever lasted, which was usually about the time when the pustules had fully maturated and the scabs had formed, the fever seldom extending

beyond that period. It was then omitted, and bark ordered, if there had been great prostration, after a serious attack. A draught containing one drachm of tincture of hyoscyamus, in an ounce of camphor mixture, was given at night, as soon as the patient complained of any restlessness or itching, which was about the second or third day of the eruption in the confluent form; but they sometimes complained of it on the first day, when the eruption appeared to be retarded, as if struggling to force its way through the cutis vera. This was continued every night as long as the sleeplessness from the pruritus continued, and at the same time the following liniment or ointment was laid on with a large-sized camel hair-brush three or four times a day over the face and any other part of the body of which the patient complained of being itchy, viz.: half a drachm of extract of belladonna, rubbed up with half a drachm of spermaceti ointment, to which were added 3½ oz. of olive oil and 2½ drachms of chloroform. The cerate was added to give it consistence and hold the chloroform in suspension, but the bottle must, notwithstanding, be well shaken before using, as the chloroform will subside after standing for any time.

In giving the above as being generally sufficient, I should have said, as the basis of my treatment, I wish it to be distinctly understood that I do not mean it in an empirical sense, as every case of small-pox must be treated according to the individual symptoms, and the practitioner must be prepared to meet every contingency or complication of other organs that may arise, either of the head, chest, or abdomen, and act accordingly; but, as far as I can at present judge, it appears to me that by adopting the above mode of treatment, the tendency to such complication will be much diminished or modified.

I may here say a few words on the rationale of the treatment. The mixture is intended both for the purpose of keeping the bowels free, and reducing the fever and irritation of the skin without depressing the system, as we cannot tell *à priori* what secondary affection may set in, in which the vital powers may be brought to the lowest ebb and require to be sustained by enormous stimulants.

As to the administration of the full doses of hyoscyamus at night, I wish specially to direct attention to it as a curative means in the treatment of small-pox, and I consider that without its aid I should not have had anything like the success which I have had; and there need be no apprehension of giving it even when delirium sets in (the latter being met by appropriate treatment)—the object which I had in view being both for the purpose of procuring sleep, as also of allaying the

irritation, and which is gained, I suspect, by its causing the eruption to force its way more kindly through the cutis vera; and this latter effect is also favoured by the external application of the chloroform and belladona ointment, which I consider a valuable adjunct in the treatment of small-pox. The patients invariably expressed their sense of relief soon after its application, some saying it made the skin pliable; others, that it made it feel cool; others, again, that it made it moist; but all felt it relieve the itching or tingling feel.

One remarkable fact which I have observed since I have commenced using this ointment is, that none of the confluent cases were pitted (with the exception of three cases, and in these very slightly indeed), and we could perceive, after the scabs became detached, the places where the original pustules were had an elevated instead of a depressed base, so that the subsequent absorption left the skin in its normal condition. I should, however, wish that other practitioners would try the ointment, in order to ascertain whether this latter circumstance was accidental or not.

Perhaps it may not be here misplaced to give one case, *in extenso*, almost one of the last which occurred in my battalion; and I do so, as it presents one or two features of interest, and besides, was one of the few in which there was slight pitting.

Private James S———, 75th regiment, aged 18, admitted 2nd June, 1858, an Irishman, had been formerly a sailor. This man had only been discharged from hospital two days previously, having had gonorrhœa and orchitis. He said he was attacked with a shivering fit, and had headach yesterday evening. Upon admission this morning he had the following symptoms:—skin hot; face much flushed; pulse quick; tongue furred, and severe headach; the bowels rather confined; no appetite. Ordered half a drachm of the compound rhubarb powder; the diet, spoon (which consists of two pints of tea and half a pound of bread), with two bottles of lemonade and two additional pints of tea.

June 3. The symptoms much aggravated, with slight nausea; restlessness; the tongue dry, and with excessive thirst. The powder to be repeated twice to-day, and the diet and extras same as yesterday.

June 4. Removed to small-pox hospital, as, at the morning visit, the patient was covered with a number of minute, thick-set papules on the face and neck, but with some slight abatement of the symptoms, as the tongue was not so dry, and the thirst not so great; the other symptoms much the same. Or-

dered a mixture composed of 2 ounces of solution of acetate of ammonia, 2 drachms of compound rhubarb powder, and 6 ounces of camphor mixture, of which he was to take two tablespoonfuls every four hours; and a draught at night of one drachm of tincture of hyoscyamus in an ounce of camphor mixture; diet and extras the same.

June 5. The papules, more elevated, have now made their appearance in a copious crop on the body and extremities; the symptoms much the same as yesterday, but there is more restlessness, and a great tendency to delirium. The medicines to be continued, and he was ordered a powder of 3 grains each of calomel and James' powder to be taken immediately, and the chloroform ointment to be applied three or four times daily to the face and other parts of the body, if necessary. Diet and extras the same.

June 6. The eruption is now of a vesicular form, very close set, and filling fast. The spots will be of a large size, and must coalesce on the face. However, the patient is much easier, the ointment keeping the skin cooler and more pliable, and he expresses a great sense of relief from it; the calomel has subdued the head affection, though the fever is still very high. The mixture, draught, and ointment to be continued as before. Diet and extras the same.

June 7. The vesicles continue to enlarge; complains of sore throat, which upon examination was found to be caused by an eruption on the roof of the mouth, arches of the palate, and back of the pharynx; there is also again a slight tendency to delirium. Ordered the calomel and James' powder as before; the draught and liniment to be continued, but half an ounce of the tincture of hyoscyamus was substituted for the compound rhubarb powder in the mixture, and the throat to be touched with a 20-grain solution of nitrate of silver. Diet and extras the same.

June 8. The head better, and is as well as can be expected, considering the severity of the attack and the amount of fever present. The vesicles have run into one another, and are commencing to maturate, many of them with a depressed apex. Continue mixture, draught, and ointment. Diet and extras the same, with the addition of 2 ounces of arrow-root.

June 9. The patient slept well last night, and not so much fever, though more restless, this morning. The pulse is still high, the tongue moister; the eruption is now pustular, and of very large size where discrete on the body and extremities, but it has run into large patches on the face; there is also considerable swelling of the palpebræ. The medicines to be

continued as yesterday. The diet and extras the same. 8 o'clock P. M. he appeared very low and restless; the tongue being dry and brownish, the hyoscyamus draught was ordered not to be given, but 2 gills of wine instead.

June 10. Slept well last night, and the wine appears to have agreed with him, as the tongue is much moister, though to a casual observer he would appear much lower and more restless. (My assistant, Mr. Davis, 75th regiment, who entered this case, here observes, that he expects an improvement to-morrow.) Mixture and ointment to be continued. Spoon diet, with the wine, lemonade, arrow-root, and tea, as yesterday.

June 11. There is every appearance of amendment this morning, some of the pustules on the face commencing to desiccate, though on the extremities they are still only maturating; does not complain of the throat. The medicines and diet as yesterday.

June 12. The crisis has evidently passed, and the patient much improved. The medicines and diet as yesterday.

June 14. Steadily improving since the last report. The scabs have nearly all disappeared from the face, and (with the exception of a very few spots of small size, which I do not think will ultimately show much) the places where the pustules were have an elevated base, instead of a depression. One curious circumstance in this case is, that though the face and rest of the body are now nearly free from scabs, the pustules on the hands have not yet burst, and remain large, round, and full formed. Omit mixture and ointment; ordered instead to have two tablespoonfuls of a mixture of infusion of bark, 8 oz., and tincture of orange-peel, 3 drachms, three times a day. Diet, spoon, with half a fowl, a rice-pudding, half a pound of bread, one pint of milk, two gills of wine, and one pint of porter.

June 17. Getting stronger every day. The hands are now free from scabs, but a large boil is forming on the right arm. The mixture and diet continued.

June 20. The abscess was opened to-day. The patient is gaining strength rapidly. Continue mixture and diet.

June 26. The patient is now convalescent, with full diet, with one gill of wine and one pint of porter; will be kept in hospital for some time longer, as he is too weak to do any duty.

I may here state that I am greatly indebted both to Assistant Surgeon M'Intyre, 11th regiment, and Assistant Surgeon Davis, 57th regiment, for the manner in which they carried out my instructions during this epidemic of small-pox.

ART. VII.—*On Cancer*[a]. By MAURICE HENRY COLLIS, M. B., M. R. I. A., F. R. C. S., Surgeon to the Meath Hospital and County Dublin Infirmary; and Examiner in Surgery to the Queen's University in Ireland.

(*Continued from* vol. xxv. p. 339.)

IN the former part of this essay I have endeavoured to define cancer; to describe its special element; to show what causes chiefly interfered with the recognition of this special element. Before passing on to treat of the question of its origin in the economy, it is necessary to take some note of the peculiarities of those kindred growths which most resemble it, and which are most frequently taken for it. Writing, as I do, mainly for those who have not studied these questions with the light thrown on them by the microscope, I must be pardoned if much that I shall have occasion to say is already familiar to the educated microscopist. For the illustration or proof of the argument reference must be made to facts that are already well known to him, and to conclusions for him long since established. It will not, however, be without its use, even to such readers, in encouraging them against opposition.

One of these, an old and valued friend, thus writes:—"Je crois que vous soutenez une bonne cause, et je ne désespére pas de voir par vos efforts les esprits serieux revenir dans la bonne voie, dont voulaient nous écarter les inepties de certaines gens qui ne connaissaient rien a la micrographie."

Of the surgical affections liable to be confounded with cancer, there are some in which error of diagnosis will only occur as the result of ignorance or culpable carelessness,—though, when we read of Liston plunging a lancet into a cancer, and Velpeau amputating an abscess, we may well pause before we censure such mistakes in too harsh language.

Syphilitic tubercle of the lip or face resembles genuine schirrus very closely, and has been occasionally mistaken for it, and removed by operation. The syphilitic may be known by the absence of sharp, darting, or plunging pains, by its more evenly circular outline, and superficial extent of ulceration; the

[a] Explanation of the plate:—

Fig. 1. Section of Epulis, showing warty enlargement of the papillæ and arrangement of epithelial cells, 200 diam.

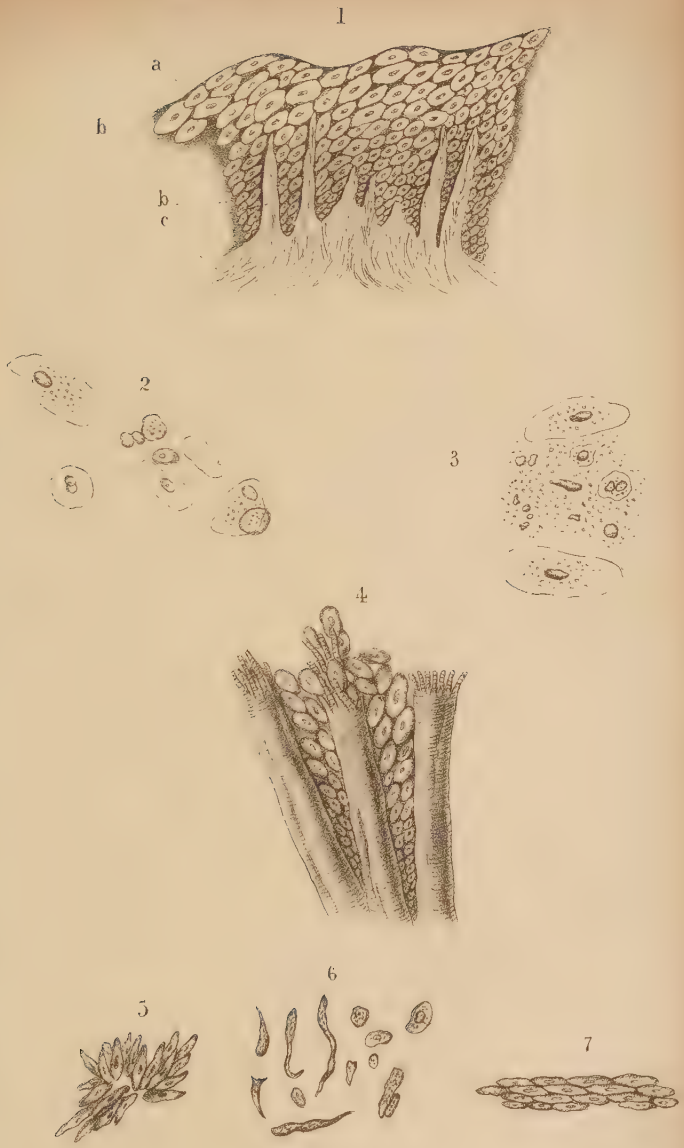
„ 2, 3. Epithelial Cells from Epithelioma, 400 diam.

„ 4. Epithelial Cells pushing aside muscular fibres. The cells are smaller as they get deeper, 400 diam.

„ 5. Radiated arrangement of Cells of fibroid growth, 400 diam.

„ 6. Separate Cells from do., 400 diam.

„ 7. Arrangement of the secondary fibroid growths.

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other by irregular edges, undermined in one place, thickened and everted in another, and by a floor of great unevenness, with the addition of well-marked lancinating pain, as above mentioned, and of radiating fibrous bands, producing faint depressions in the surrounding skin. These depressions not only exist where the lip or cheek is much thickened, but are more apparent; in such a case, as the physical differences are concentrated in a small space, it requires a little practice and some careful inspection of the parts to recognise them: a small pocket lens is of use for this purpose. There are no specific microscopic characters attachable to syphilis in any form or stage; so that any diagnostic evidence of this kind must be negative when the disease is syphilitic.

Of all tumours, simple epulis seems to deviate least from healthy structure; it is essentially a hypertrophy; the fibrous basis of the mucous membrane is increased in quantity, and the papillæ are much enlarged; with the enlargement of these, the growth of epithelium keeps pace, each retaining at first, and sometimes permanently, its relative position to the other (Fig. 1). Generally, however, the epithelium, sooner or later, extends downwards into the interstices at the base of the papillæ, and the disease passes into what is known as malignant epulis, a form of epithelioma. Epithelioma is readily to be distinguished from scirrhus, whether it be found on mucous membrane, or on skin, or on the border ground between them. In all these localities it has its specific features, both in the early stage and when ulceration has advanced. As far as I know at present, it does not occur as a primary disease of the glands, and it never has its seat in the female breast, if we are to believe Velpeau; while cancer in the female breast is more common in its occurrence than all other tumours put together.

Epithelioma specially affects the border ground where skin and mucous membranes meet, and here its special peculiarities are most readily observed. The affection is primarily one of hypertrophy; it is only when ulceration commences that it takes on the more dangerous form of interstitial growth. It commences on the skin as a dry and scabby wart, which falls off from time to time, and exposes on each occasion an increasingly wide surface of ulceration. At the junction of skin and mucous membrane it begins as a chap or fissure, with indurated edges, and has a similar tendency to scab and ulcerate. When it originates on a mucous surface, it is either as a flat condylomatous wart, or as a deposit in the mucous follicles. Thus it is always as local hypertrophy of the investing epithelium that it commences; and from first to last it frequently retains a

strictly local character. Many of these growths upon the skin are nothing more than hard horny masses of dry epithelial cells, which occasionally fall off, and are slowly replaced. These may be either prominent or flat; we have frequent examples of them along the edge of the lip upon that part which is covered with coloured skin, external to the line of moist membrane; these are very harmless, and may last for many years unaltered in extent and depth, until accidental violence or inflammatory action excite them to spread. However, in the majority of epithelial growths, ulceration of the integument and deposit of epithelial cells in its substance take place sooner or later. The skin splits into papillæ as in a wart, and the ever increasing deposit of cells upon the surfaces of these papillæ separates them more deeply and more widely apart. A process of disintegration is continually going on in the cells, and the surface of parts not subject to evaporation is soaked in putrid remains. How far this aids in the spread of the disease by exciting inflammatory action and ulceration of the sound structures is hard to say. On mucous membranes, where moisture abounds, and growth is rapid, this tendency to ulcerate is very marked; cauliflower growths from the uterus, for example, although prominent on the surface, and consisting of aggregations of the epithelial cells, have their seat on ulcerations which may destroy large portions of the organ. The ulcers, when exposed, present jagged, irregular margins and surfaces; enlarged papillæ are visible during the early period of the disease, when the surface is wiped free from discharge; at the edges they may be detected at any period. The neighbouring glands are affected irregularly; sometimes not all; sometimes at an early stage. The impression on my mind is, that the tendency to infect neighbouring glands is greatest when the disease has its seat on the mucous membrane, and least when it is on skin and fibro-mucous membrane covering the alveolæ. General infection must be extremely rare, for those who still classify it as cancer can bring forward very few satisfactory cases of general poisoning from genuine epithelioma. The disease often kills by local destruction and general waste, but without anything which can be called special or peculiar cachexia. When removed, even completely, it will sometimes return in an aggravated form, and with rapidity; but this is quite exceptional; in the majority of cases in which the disease is removed completely, it does not return. All these facts show that there is much less tendency to general poisoning than in cancer, and justify us in classing it apart, especially as it is found to possess a different anatomical structure.

Some dissections I have made of epithelial disease of the lip show very plainly the mode of its growth as contrasted with that of healthy epidermis or epithelium. The cells of the ordinary scarf skin are small while in contact with the papillæ from which they spring, and as they advance towards the surface they enlarge by imbibition of the fluid which surrounds them, the enlargement being a vital, and not merely a mechanical process. Arriving at the surface, their growth ceases—atmospheric and other external influence cause them to dry up or burst, and fall to pieces—to be succeeded by fresh layers from within. The growth of epithelial cells is, in fact, guided by the same laws of vital endosmose and exosmose as all other cell-growths are subject to. Each cell, or group of cells, though extra-vascular, is nourished from the blood, and is as dependent on material supplied by neighbouring blood-vessels as if it were in contact with the capillaries. Each cell grows from a minute speck, scarcely discernible by high magnifiers, to its full size, by appropriating to itself the material supplied by the blood. In healthy growth the cells are smallest in contact with the papilla from which they grow. In the early stages of epithelioma, while it remains a true hypertrophy (Fig. 1), the cells retain the same relative position to the dermis, though vastly increased in number, and often pushed aside and crowded against one another, so that their order is hard to make out; especially when they collect in the cavity of a follicle.

When ulceration sets in, and when the warty papillæ have become separated, the cells begin to grow in a different fashion; a new phase in the disease occurs, and, from being a purely local hypertrophy, epithelioma becomes an interstitial growth, destroying by pressure, and extending its ramifications to various distances round its original seat. The mode in which this important change occurs is as follows:—In the angle made by the fissure of the skin between the bases of two papillæ, plastic exudation matter is effused; this lymph becomes the seat of growth of new cells, which, as they grow, increase the width of the fissure, and with the width its depth. Still, in the angle, new cells are formed until the interstices of the deeper layers of skin, and the interspaces of the areolar tissue, are filled with epithelial cells. Arriving at the muscles, the plastic lymph insinuates itself between the fibres, and separates them in like manner (Fig. 4); by degrees the proper muscular and cutaneous tissue is removed by absorption to some degree, or distorted and displaced in the middle of the mass of cells. The great peculiarity of this interstitial growth of cells is, that near the surface of the papillæ they are larger than they are deep

among the fibres of the skin or muscle, in contrast to their healthy arrangement.

This tendency to become interstitial is of the utmost clinical value, and explains to some extent at least both the mode of propagation to neighbouring glands and the recurrence of the disease after seemingly perfect removal. All through the body vital changes are continually going on. In these the lymph or plasma which moistens all the tissues is the most active agent, or, to speak correctly, the capillaries are the agents, the lymph is the material with which they work. Each part of the body takes from this lymph what it needs, and from it muscle builds up muscle, and the same inherent vitality adds another cell to the one that already exists. The material is not exhausted in any locality by being heavily drawn on—on the contrary, the more vehemently active the formative nisus, so much the more abundant is the material supplied through the blood-vessels. The balance of healthy growth is thus destroyed. The lymph now becomes the agent in the spread of the disease. It carries the germs of the morbid growth from the diseased parts into the interstices of neighbouring parts, and lodges them there—thus the little granules from which the epithelial cells are developed are carried into parts at a little distance from the original growth, and become fresh centres of disease. To the same agency is to be attributed the tendency to poison the neighbouring glands, whether follicular, sebaceous, or lymphatic. This should teach us to cut wide of these growths, and to examine the cut margins with a lens. The masses of epithelium are of such a size, owing to rapid accumulation, and the distortions of the natural structures are so considerable, that they are readily detected. This can be done on the spot with a pocket lens, and should never be neglected; and where the smallest deviation from healthy appearance can be detected, the surgeon must not hesitate to remove more and more of the neighbouring parts until the remotest fragment of disease is excised. The eye is here a better guide than the most experienced finger, but the eye itself must be educated by sufficient study both of healthy and diseased structures.

Of all tumours which are mistaken for cancer, those known as fibro-plastic are the most deceptive. Velpeau's case of napiform cancer, mentioned in page 459 of his work on Diseases of the Breast, seems to have been of this class. This case is one of the standing points of those who assert the identity of the two forms of growth. Apart from the fact that this case occurred in 1823, when nothing was known of the nature of

such tumours, and that to call it cancer or fibro-plastic is to beg the question, it is enough to say that a few exceptions do not invalidate general conclusions. Here was a case, if you will, of fibro-plastic growth, followed by general infection, and deposit of similar tumours in distant organs; but it no more proves the identity of the disease with cancer than a similar general tubercular deposit would. Who has not seen general tubercular infection following a local tubercular tumour, and as clinically malignant as a similar growth of cancer would be?—and yet no one will therefore infer that tubercle of that form is cancerous. This is an example of the mischief done by imperfect or unfair observation.

A simple description of a case of fibroid tumour which I removed some years ago will exemplify the nature of these growths, both in their clinical and anatomical features. The growth belongs to the class described by Dr. Hughes Bennett as fibro-nucleated, and mentioned by Mr. Paget in page 166 of his second volume.

Doyle, aged 51, labourer, admitted into the Meath Hospital in March, 1854, for a tumour on the dorsum of the foot. From his statement it would appear to have begun in July, 1853, as a small kernel on the outer side of the dorsum of the foot, subcutaneous and moveable. It grew rapidly until Christmas, 1853, when it had almost attained the volume of a large orange. It was never painful unless after hard labour; then it became severely painful, the pain being a steady, heavy pain, not lancinating. As it slowly increased, the integuments gave way over the centre of the tumour, where they were most on the stretch, until there was a spot bare of skin, about the diameter of a shilling. It bled a couple of times, slightly, from injury. There was a constant but very slight purulent discharge from the ulcer. The tumour was soft, elastic, almost fluctuating, and lay superficial to the tendons, which moved freely under it, and the skin, though tightly stretched, was not incorporated with it, even at the margins of the ulcer. The man's general health was perfectly good. No glands in the neighbourhood were enlarged, nor in the groin. He had some old cicatrices on the leg from varicose veins which had suppurated, and one gland in connexion with these on the inner side of the head of the tibia was enlarged. I mention this, because the presence of this gland was looked upon as decisive of the disease of the foot having extended beyond the primary seat, and was one of the main reasons why amputation had been proposed to him by a very eminent surgeon, as the only means that held out even the hope of a cure. The

man refused to lose his limb, in which conclusion, I must say, I quite agreed with him, and I removed the tumour on the 15th March, 1854. There was a good deal of hemorrhage during the operation, principally owing to my cutting into the substance of the tumour at first. The tumour was contained in a very thin, false cyst of condensed cellular tissue. It was nodulated, but not lobed; its texture was friable, tearing readily, and making it hard to get out whole. I cauterized the part on which it lay with caustic potash, both to check hemorrhage and destroy all means of re-growth, if possible. There were few large vessels running into it, but a general arterial oozing from the surface. Six days after the operation some fungous-looking growths sprung up on the floor of the wound, and he further got erysipelas,—which was then epidemic,—with severe fever and great enlargement of the glands of the groin. These alarming symptoms subsided under simple treatment, and in a fortnight all was healing kindly.

May 9. I snipped off three small nipple-like growths, and touched their bases with caustic, and dismissed him, well, by the end of June.

In September, 1854, and again in May, 1855, I removed from the cicatrix small tumours, the size of beans. On the last occasion I scraped the tendons, and denuded the fascia of all cellular tissue, and made sure of complete removal. Since that date I have repeatedly seen the man, who is a labourer, and resides at Donnybrook, and there has not been the smallest return of the disease, either local or general.

I shall now briefly describe the appearance of the tumours. The first and largest was slightly nodulated, owing to its accommodating its shape as it grew to bands of fascia that passed over it. The other growths were oval or globular. They were of a creamy white when divided, but the section was dry, nothing exuding from the surface when cut open but some serous fluid. They were friable, readily breaking up into little seeds or acini, which were individually very tough and resisting. These acini seemed to hold together in masses towards one common centre. When put under the microscope they were found to present small, pale, delicate cells (Fig. 6), not as large as the nuclei of cancer-cells, of a long, oval shape, sometimes elongated into a sort of tail or fibre. Numbers of these seemed to radiate from a common centre (Fig. 5). There was little fibrous basis, and the vascular tissue was very fine, and scarcely to be made out. The nucleus of these cells was also pale, and small in size, the cell-wall was easily broken up by the addition of water, which swelled it up and burst it, while acetic acid dis-

solved the cell-wall, and rendered the nucleus dim and shaded. It will be seen that in scarcely a particular does the above description agree with that of cancer. This growth was one of the so-called fibro-plastic group—growths which are allied to cancer, but not identical with it, and the study of which will teach us much on the subject of cancer.

The secondary growths differed from the original only in the manner in which the cells were arranged. They lay regularly like rows of beads—the centre of one cell corresponding to the ends of two other cells (Fig. 7). The clinical features that distinguish this from cancer are, briefly,—the absence of lancinating pains at all times, and the absence of glandular infection, which in the case of cancer would most undoubtedly have set in contemporaneously with the ulceration or giving way of the integuments. Other diagnostic features may have existed, but these were all I could discover before removal of the tumour, and they were enough to guide me in the treatment. When returning to the subject of the growth of cancer, and its treatment, the features of such cases will be found to throw some valuable light upon it.

Another class of growths, namely, the melanotic, are a source of difficulty in settling the question of the nature of cancer. Sometimes they seem to be most virulent; at other times they are very harmless. I have seen a paper by a Mr. Robertson, which gives a clue to the solution, and a practical guide in the question of operation. He says that all cases in which the deposit is confined to the eyeball can be treated successfully by extirpation ; while in all cases in which the black matter has been found external to it, among the other contents of the orbit, relapse has followed operation. He gives ample statistics in proof of this assertion.

The instances that I have seen coincide with these statements, and on examination I have found that the growths which are confined to the eyeball do not contain any of the specific element of cancer. They are simply hypertrophies of the natural pigment, which gradually extend into the neighbouring parts by a sort of mechanical infiltration such as occurs in epithelioma; they may distend the eyeball until it bursts, without incorporating the fibrous sclerotic with them; while the cancerous melanosis invariably poisons the sclerotic and the muscles and appendages of the eye. The clinical features of the two are marked by symptoms depending on these differences. The pain in cancerous melanosis is also, as usual, sharp and darting; in the other it is of a bursting, throbbing nature, until the distended sclerotic gives way or is punc-

tured. How far simple evacuation of the humours of the eye could be depended on for a cure of simple melanosis is yet to be determined. I prefer the safer plan of removing the sclerotic, an operation by no means difficult. It only requires a light circular sweep of a sharp scalpel to detach the conjunctiva and the muscles from the surface of the sclerotic, and to pass a curved scissors behind, to divide the optic nerve, and the eye drops out—if the eyeball is much distended, its contents may be previously evacuated by a puncture. This will, however, prevent a satisfactory examination of the growth.

(*To be continued.*)

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Art. VIII.—*Suggestions relative to the Employment of the Tincture of the Sesquichloride of Iron in Puerperal Peritonitis, Iritis, and allied disorders.* By Thomas P. Heslop, Physician to the Queen's Hospital; Professor of Physiology, Queen's College, Birmingham.

During the past nine or ten months I have administered the steel tincture with excellent effects, in cases of epidemic angina membranacea, though at present altogether unrecognised. I use this term, not in the restricted sense in which it has been employed by a few writers, as Gölis; but as expressive of a species of sore throat, attended with fibrinous exudation on the buccal mucous membrane, fauces, and nares, more or less frequently extending into the air-passages proper; moderately contagious; intensely adynamic in its general manifestations; constantly accompanied by severe and even fatal hemorrhages; for the most part attacking those who have for some time previously been out of health, and especially those whose hygienic environments are open to criticism.

I was led originally to hope that this powerful tincture would prove of service in that fearful malady, by observing its alliance with erysipelas, to which also attention has been drawn by some of its earliest delineators; the tendency to hemorrhages; and, above all, the bad effects of all remedies of a depressing nature. The results achieved by the medication which I entered upon last August have raised a belief in my mind that in some allied disorders, attended with the exudation of a plastic fibrine in great quantity, epidemic, contagious, highly adynamic, and, for the most part, resisting all known remedial measures,—the same medication might, mayhap, prove of service.

From the particular branch of the profession which I practise, I have very rare opportunities of putting my views to the test of experiment, so have no resource but to take the somewhat unusual course of urging a trial of a special mode of dealing with these fatal disorders, that mode not having hitherto been the subject of my own experience.

It is rarely indeed that any physician, however instructed, or however experienced, can feel that amount of confidence in the utility of a proposed therapeutical measure as to entitle him to lay it before the profession without having previously employed it himself. Still more rarely can he be warranted in predicting with certitude its effects. We have, unhappily, no such definite and universal laws in medicine as in astronomy; we cannot predict events with a sure reliance on our science. The circumstances which may completely baffle our hopes, and bring to nought our anticipations, are too numerous and too little understood not to make us ever doubtful of the strength of *à priori* reasonings, until actual experience has given them validity. But it should be remembered that analogical argument has proved to be of signal service in the past history of medicine, both in reference to diagnosis and therapeutics, just as it has availed much in political and social science.

I shall not enter here upon a detailed account of the treatment of diphtheria or membranous angina, by means of the local application of dilute hydrochloric acid, and the internal administration of tincture of sesquichloride of iron, conjoined with stimulants and careful nourishment of the patients. I have recently, though at present in a fragmentary manner, placed my views upon this subject before my professional brethren in the columns of a London journal; and Mr. Houghton, of Dudley, has sent some illustrations of the same mode of practice to the same journal, which will shortly be published. That fearful disease has been epidemic over a considerable portion of England for the last twenty months, and has been peculiarly prevalent in the midland district, of which Birmingham is the densely populated centre. During the whole of that period I have enjoyed the most favourable opportunities of studying the disease; and while my success in its treatment during the first twelve months of the time was no greater than that of my neighbours, or than that of our French confréres, whose efforts to cope with this, to them familiar, malady have been confessedly baffled—I have during the past eight or nine months obtained results of a nature so remarkable as to induce me to state, and often to reiterate in the consultation

room, that I am unacquainted with a severe affection, which, when treated promptly, answers with equal rapidity and equal certainty to the endeavours of the physician.

The disorder attacks the weak—those subject to conditions usually predisposing to pestilential maladies, overcrowding, bad air, imperfect sewerage, bad water, damp houses; persons recently the subject of other affections, more or less severe, as scarlatina, measles, albuminuria, diarrhœa, erysipelas. It is contagious, and, like the last-named disorder, may be sporadic or epidemic, idiopathic or traumatic. It is characterized by a peculiar exudation, totally without a tendency to organization, and is occasionally attended with a disintegration of the invaded structures, leading to hemorrhage and abscess, as in scarlatina or erysipelas, or gives rise to a pultaceous putrilage, like the interior of the womb or the uterine appendages in general, in the most malignant forms of puerperal metritis or peritonitis. How much does all this remind us of that series of symptoms and phenomena which most authorities have agreed to term "puerperal fever"!

This subject has recently undergone a lengthened, but by no means exhaustive, discussion in the Academy of Medicine. One of the most accomplished members of the French school, and particularly conversant with every form of diphtherite, has declared that all the multiform phenomena of puerperal fever are met with in other states,—"en dehors de la puerpéralité." He avers of these phenomena, that they exist "chez le fœtus, ainsi qu'il résulte de la thèse de M. Lorain, qui, dans l'epidémie qu'il a observée, a trouvé, à l'autopsie de sept ou huit fœtus, morts dans le sein maternel, des fausses membranes fibrineuses dans le péritoine; il les retrouve chez le nouveau-né dans certains érysipèles, certaines phlébites, dans le muguet grave, dans la péritonite, la pleurésie, les abcès articulaires qui surviennent chez les nouveau-nés placés dans les hôpitaux ravagés par la fièvre puerpérale; il les poursuit encore chez la femme au début du travail, alors qu'il n'y a point encore de plaie, de porte d'entrée ouverte an virus, ou même pendant l'époque menstruelle. Poussant plus loin l'analogie, il rapproche de ces faits ceux que M. Velpeau, M. Tessier, ont signalés chez les opéres, et que tous les chirurgiens connaissent à merveille. Dans la fièvre puerpérale, comme dans la fièvre des blessés, on trouve en effet les abcés multiples, les inflammations purulentes des séreuses, les phlebites, les érysipèles, *les diphthérites*, analogues à la pourriture d'hôpital; d'un autre côté, les symptômes de la fièvre puerpérale, aussi bien que les lésions

que nous venous de rappeler, s'observent également chez les hommes atteints de traumatisme."—*Speech of M. Trousseau*[a].

One by one, the honourable Academicians expressed their distrust of any remedial measures hitherto advised. M. Cazeaux contented himself with "according, neverthless, a certain degree of confidence in calomel, in very small doses, until a copious salivation is induced." M. Bouillaud, differing from his colleagues in many points, so fully recognises the inefficacy of treatment, "in the greatest number of cases," that he leaves out its discussion.

It may not be wholly true that this disease resists every known plan of treatment. I, with many others, have seen, sufficiently often, useful results from the employment of turpentine, internally and externally; detergent vaginal injections, calomel and opium, and a stimulant medication in general, to induce me to pause before assenting to a proposition so injurious to the efforts of our predecessors. But enough is admitted on all hands, concerning the resistance of a severe case of the malady, especially when epidemic, to all our therapeutic proceedings, to warrant the statement, that this is a morbid condition, which, more than almost any common disease, demands a reconsideration of its *modus medendi*, and justifies even a bold experimentation.

Arguing, then, from the general history of the maladies, the vital and pathological peculiarities of the sufferers, and in view of the sad results of the present treatment of puerperal fever, I venture diffidently to suggest a trial of the same measures in it, which I have found so beneficial, so eminently curative, in diphtheria. I have given in this disease to an adult about 25 minims of the London tincture of sesquichloride of iron every two, three, or four hours, and have conjoined a few drops of dilute hydrochloric acid. I have also applied daily, sometimes twice a day, by means of sponges, a solution of hydrochloric acid, but little weaker than the dilute acid of the London Pharmacopœia, and have always enjoined the regular use of weaker gargles of the same acid. This, with the constant administration of stimulants, beef tea, milk, and jellies, has constituted my treatment, and I repeat here what I have already stated in other quarters, that since I have become aware of the value of this medication, nearly ten months ago, I have not lost one case[b].

I believe it will be found of the utmost service to imitate

[a] Archives Générales de Médecine, Mai, 1858.

[b] This is not so *strictly* true as at the time of writing the above statement.

every branch of this treatment in puerperal fever, with the exception, perhaps, of the stronger hydrochloric acid application. But even of this exception I am doubtful. So far as I know, obstetricians have never made an ocular examination of the walls of the vagina and uterine neck in puerperal fevers. And there are, unquestionably, good reasons for interfering as little as possible with these parts, under such or any conditions. Yet it is likely to be of great value, both in reference to diagnosis and treatment, could we become assured of the presence of diphtheritic exudation here. Under such circumstances I should not hesitate to treat the vagina with as little ceremony as the fauces, and boldly apply to its walls the dilute acid, as before mentioned. It must be remembered that the subsequent decay of these nitrogenous materials, exposed to the conjoint influences of air, heat, and moisture, is a fruitful source of the putrescent fœtor so well known in the chamber of the diphtheritic and puerperal patient, and assumes the highest importance when considered in relation to the possible resorption of these noxious substances.

But, at all events, whether the fluids trickling from the vagina or stagnating in that passage arise from the débris of the uterine walls, an actual exudation on their inner surface, or, as I believe in many cases, from these combined with aplastic deposits on the vaginal walls,—I entertain the opinion that weak injections of hydrochloric acid at frequent intervals, and administered by a competent person, with effective instruments, will be found a valuable aid to the obstetrician. I may be permitted to observe that solutions of nitrate of silver are likely to be of as little service here as I have found them to be in the analogous affection of the throat. They should be discarded from the treatment of these disorders.

Let me urge that the experimenter should dispel from his mind all notions of heat of skin, thirst, loaded tongue, being antagonistic to the employment of the steel tincture. I have had abundant evidence that these, with delirium and other serious symptoms more or less connected with the febrile condition, in no degree contra-indicate its use. On the contrary, all these symptoms have yielded in diphtheria, and, as is notorious, in erysipelas, with a rapidity which has surprised me. The remedy must be administered with unflinching hand, and must be steadily persisted in until the case terminates in well-established convalescence, or the contrary.

I fear that the suggestion of a preparation of iron in a febrile disorder will raise grave doubts in the minds of most persons who have not given some reflection to the subject. To them

I would say, is not erysipelas a pre-eminently febrile disorder, foudroyant in its character, formidable and sudden in its onset, more like some of the worst forms of puerperal fever, in this latter point of view, than almost any other disorder? And yet no one who has given a trial of this particular preparation in the former affection entertains a doubt that its use is one of the most valuable gifts of modern inquiry.

I caution my readers against the opinion, so likely to be entertained, that this is an iron preparation merely. I do not know that any other salt of that metal could be substituted for it. Every thing is against such a supposition. We are too apt to imagine the base of a given salt to be the sole source of therapeutic power in that salt, though it requires but little acquaintance with pharmacology to become convinced that bicarbonate of potash, nitrate of potash, and iodide of potassium, respectively possess qualities which render the substitution of any one for another generally impossible. But, again, the particular preparation in question is allowed to be productive of effects which may be fairly termed peculiar to it. Two especially may be here alluded to—namely, that produced by its administration in spasmodic stricture of the urethra, and that resulting from its employment in certain forms of aneurism. We are unaware, at present, of any other iron compound that can be substituted for it, in these conditions.

On these grounds, very briefly entered upon, I ask my brethren who enjoy the requisite opportunities, to seek to combat, by a safe though powerful agent, a disease which may still be with propriety termed the scourge of lying-in hospitals, and the terror of private families. If it shall prove ineffective, it is in the highest degree probable that it will not prove injurious, and such an experiment cannot, at all events, be fairly subjected to the charge that it prevented the administration of medicaments of such recognised utility that the chances of the recovery of the patient were appreciably diminished by such a proceeding.

I shall add but a few words upon the treatment of some forms of iritis. It is well known that there are cases of this disease occurring in the syphilitic state and in various asthenic conditions of the organism, which either primarily forbid the employment of mercury, the grand remedy, as at present taught, for fibrinous exudation—or which happen to arise during or soon after full mercurialism has been induced, and, therefore, contra-indicate, *ipso facto*, the further use of that drug. It is hardly necessary to state that it is in these conditions turpen-

tine has been found so valuable—a fact of great interest in reference to the previous portion of this paper.

Eight or nine years ago a patient was admitted into the General Hospital of this town, labouring under aggravated syphilitic lepra. He was treated with mercury, until its full constitutional effect was produced. The eruption disappeared, but an intense iritis almost immediately supervened. He was now placed upon turpentine, which realized all that its most ardent advocates have declared. The exudation was absorbed, and the integrity of the eye maintained. The patient subsequently became afflicted with one of the most severe phlegmons below the deep fascia of the neck which I have ever seen. But he finally escaped with his life, and with health apparently fully restored.

Now it is in such cases as this that I should push the steel tincture with the utmost freedom. I anticipate the greatest advantage from its use. The exudation may be got rid of, I believe, and the mercurial anemia combated at the same time.

I have recently observed the disappearance of the fibrinous film from vesicated surfaces in a case of diphtheria, and the complete arrest of its production under the use of this remedy, in the course of forty-eight hours after its first administration.

It is probable that there are cases of diphtheritic iritis having no connexion with any other infection, just as Von Gräfe has so ably proved there are cases of diphtheritic ophthalmia of an epidemic character, as lately observed by that distinguished ophthalmologist in Germany. Reasoning from my experience of the more common forms of the infection, I should imagine that the treatment above indicated would be found here of great value.

In conclusion, I beg my readers to enter upon a course of observation of the points alluded to, without prepossession, other than that which is inseparable from the human mind in its pursuit of truth, and to favour their brethren with a conscientious record of the results obtained.

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Art. IX.—*Removal of the Superior Maxilla for Disease of that Bone, at the Kilkenny County Infirmary.* By Z. Johnson, A. M., F. R. C. S., &c. &c., one of the Surgeons to that Institution.

The publication of those surgical operations which are more formidable and more rare, with a faithful account of the result, and the experiences of the operator, seems to have been

always considered as a sort of debt due at once to the surgical profession and to the interests of humanity. The history of any individual case, however surprising or interesting, can be useful only when, contrasted with others of an identical or analogous nature, it helps to clear up some difficult or doubtful point, or sets at rest some question previously in abeyance. In both medicine and surgery many important questions can be decided only by a comparison of results; and the more extended this comparison, the safer the conclusions arrived at. This is true in all branches of the healing art, but nowhere is the accumulation of evidence more important than in the history of the capital operations of surgery. The propriety of undertaking any one of these must depend on the probabilities of success, and this can only be decided by reference to the results of all the similar cases ascertainable. The more formidable or uncommon the operation, the greater the necessity for all such evidence, and wherever the archives of the profession are inadequately supplied, the duty of adding to them would seem to become imperative in proportion to the importance of the case and the infrequency of its occurrence.

These remarks are offered as some apology for encroaching on the pages of the Dublin Quarterly Journal with the description of a case of disease of the antrum, and the details of the operation performed for its removal.

To any one possessed of a very superficial knowledge of the general anatomical relations of the superior maxillary bone, and of the parts interested in its removal, it must be sufficiently obvious that the excision or resection of the upper jaw in its entirety must be, under any circumstances, a very formidable undertaking; but when to the difficulties which encompass the removal of the sound bone we add the complications of disease, the derangements of structure arising from morbid changes, the displacement of parts, and the liability to various embarrassing contingencies which are always possible, but cannot always be foreseen, we only place under review the real circumstances which attend on the removal of a diseased antrum.

The operation is an important one, too, and not less so than it is formidable. The diseases of the upper jaw are numerous, and its removal is often the only means of saving or prolonging life. These diseases are, some of them, of malignant character, some of them benign in their nature. Either the bone itself or the cavity of the antrum may be the seat of the disease. Cancer, polypus, hydatid, caries, nævus, fibrous and bony growths, have all been met with in these parts, while occasionally collections of pus or occluded secretion have so

distended the antrum as to produce, in time, great deformity and inconvenience. In the case of malignant affections it is plain there can be no chance of life but by the entire removal of all infected parts; but even in the case of many of the non-malignant affections, removal of the whole upper jaw becomes necessary, because experience has shown that, if not effectually removed, they will go on steadily increasing until they come not only to produce hideous deformity and the loss of some of our most useful senses, but eventually interfere with functions essential to the support of life itself. It is not, then, merely as a triumph of skill or as a successful instance of surgical daring, that this operation is to be regarded, but it becomes truly important as one of the many methods which surgery has contributed towards lessening human suffering and prolonging life, when all other means of cure or remedy have become utterly hopeless.

There is another consideration which adds additional interest to this operation. The circumstances which call for its performance are comparatively uncommon, and very many an experienced surgeon has, no doubt, passed through a long life and extensive practice without once meeting a case requiring it. The records of the profession, it is true, cannot be said to be altogether deficient in data on this subject, many cases of its performance having been published by eminent surgeons at home and abroad; still, the entire amount of evidence available would scarcely appear sufficient for the purposes of the statistician, or the magnitude of the interests at stake, and under this impression another is now added to the cases already on record, and the experiences of the operator transcribed for the benefit of those who may have occasion hereafter to address themselves to this very momentous undertaking.

It is not intended here to enter into an elaborate history of, or even essay on, this particular operation. The subject has been already ably treated of; and those who wish to know who first projected so bold an undertaking, who had the honour of first realizing its execution, when it was first conceived, and by what train of reasoning its feasibility was established, will find all these and many other interesting particulars very fully given in an excellent article in the thirty-first Number of the present series of this Journal, by Mr. Butcher of Dublin, who has collated much valuable information on the subject, and given it to the profession, along with the details of his own very interesting and successful "Case of Excision of the Upper Jaw." I shall only briefly remark that the credit of first proposing the entire removal of the upper jaw for disease, Mr.

Butcher would seem to have established for Lizars of Edinburgh, so far back as 1826, although it would appear, according to the same authority, that Gensoul anticipated him in the actual performance of it in 1827, Lizars himself not having realized his own proposition until 1829. It matters little, however, to science who first proposed an operation, or who performed it, if only a useful addition has been made to our knowledge or our resources. If the question of priority should at any time arise, all must acquiesce in the justice of giving to each his due—"palmam qui meruit, ferat;" beyond this it is of little consequence. But in any researches on this head it will be necessary, to discriminate between two classes of operation really very different; or, as Mr. Butcher remarks when endeavouring to decide to whom the origination of the maxillary resection was due, "operations on the upper jaw may, in reality, be classed under two heads." They are—

1. The scooping process and removal of parts of the bone.
2. Removal or disarticulation of the entire bone.

The first of these, or removal of parts of the bone, appears to have been performed at a very early period, so far back as 1693, and since then by Desault, Garengeot, Dupuytren, and other surgeons. It was the proved inadequacy of this proceeding, particularly when malignant disease was present, that led to the inquiry whether a more complete and effectual operation could not be performed. Disease was apt to return, particularly malignant disease, where any trace of the morbid structure remained behind. The well-known tendency of malignant disease to involve adjacent parts rendered a complete extirpation here, as elsewhere, imperatively necessary; otherwise it was sure to reappear, and the patient, after having fruitlessly undergone all the suffering and danger of a painful operation, died miserably at last. This led bold and master minds to devise a more perfect remedy than had been previously attempted or thought of, and accordingly, much about the same time, the idea of removing the entire bone would seem to have been conceived by more than one, though Lizars may be entitled to the merit of being the first who formally proposed it, pointing out, at the same time, the way in which it might be done, and the several steps necessary, as he thought, for its accomplishment. Of these, one was the tying of the carotid artery, which was actually performed in some of the earlier cases of this operation, but which, as experience has shown, is not at all a necessary preliminary under ordinary circumstances.

It is this proposal of Lizars, the removal of the entire bone,

which concerns the reader at present. It has been frequently performed since[a], and with an amount of success greater than, perhaps, the most sanguine could have anticipated. Indeed, when we consider the nature of the parts involved, their anatomical relations, the severity of the operation, and the dangers, immediate and secondary, which attend upon it, one can scarcely but wonder not only at the share of success it has enjoyed, but even more at the rapidity with which the patients have recovered from it: in some instances the patient is said to have been up and moving about on the eighth, and out of doors on the thirteenth or sixteenth day. In most operations of a minor character such speedy recoveries are infrequent.

But the proposal of Lizars, since realized by so many eminent surgeons, would seem to have been surpassed by the Drs. Heyfelder, the elder of whom, when Professor of Surgery at Erlangen, removed both upper jaws in three different cases, first in 1844, and subsequently in 1850 and 1852. A very interesting essay on the Resection of both Upper Jaw Bones, communicated by the younger Dr. Heyfelder, will be found in the forty-fourth Number of the present series of this Journal, in which he gives the history of the cases operated on by his father, together with notices of the operation as performed by several other surgeons; from which it would appear that Dieffenbach, Maissoneuve, Langenbeck, Dietz, and Jüngken have, as well as his father, essayed this formidable undertaking with various success; and that out of nine cases so operated on, four had died; of these, one is said to have survived a few days, one to have died of apoplexy, and two from relapse of cancer, for the removal of which the operation had been performed, but after a lapse of fifteen months and twenty-three months respectively from the resection. Such were the statistics of this operation up to the year 1857. The amount of success indicated is almost more than could have been hoped for; and it is stated that the deformity resulting from the removal of both upper jaws is not so great as that which follows from the removal of one. Any one who wishes for further information on this subject will be well repaid by a reference to the very interesting essays of Dr. O. Heyfelder and Dr. Butcher, already alluded to, and to be found in the thirty-first and forty-fifth Numbers of this Journal.

The object of this communication being only to record one

[a] The surgeons who have performed this operation, up to the present day, are, Lizars, Dupuytren, Gensoul, Liston, White, Syme, Robert, Mott, Velpeau, Lisfranc, Dieffenbach, O'Shaughnessy, Fergusson, Heyfelder, Cusack, Butcher.

other successful case of removal of the superior maxillary bone, and to describe the nature of the operation performed, the disease which called for it, and the ultimate result, it becomes necessary to proceed with the more pertinent details at once.

The patient, Patrick Mullroney, an agricultural labourer, applied first at the Kilkenny County Infirmary, in the year 1852. He was then fourteen years of age, and of a particularly sound and healthy aspect, and easy, contented expression of countenance. He presented three tumours of the head and face: one, a small, vascular, and cherry-like tumour, growing from the conjunctiva of the upper lid and external half of the left eye; another, a soft, flabby tumour, to the outer side of the left temple; and the third, an enlargement, at this time but incipient, and not at all remarkable, of the left cheek.

The two latter tumours at this time gave him no concern. He resorted to the hospital for the purpose of having the tumour of the eyeball removed. But as it was exquisitely sensitive, and any interference with it proved extremely painful, he absconded before anything effectual could be done for its removal, not, however, until the tumour on the temple had been cut down on, and found to consist only of a mass of redundant areolar tissue, which was removed; and also one of the molar teeth was at this time drawn, and a trocar passed into the antrum, but without bringing away any fluid, or, indeed, throwing any light on the cause of the enlargement of the upper jaw.

He was not seen afterwards for several years. In the spring of 1857, five years after his leaving the hospital, he reapplied for admission. It would have been impossible now to recognise him, his features were so distorted by a large tumour occupying the left side of the face, raising the left eye-brow above the level of the right, depressing the palate of the same side on the tongue, while it protruded forward so as to remind the spectator of a snout, as seen among the lower animals, at the same time displacing the nose toward the right side, and obstructing both nostrils, the left completely, the right very considerably, by its pressure on the septum narium. When examined through the mouth, it was found to extend backwards toward the tonsil, while the right half of the palate was encroached on and narrowed by the lower part of the tumour, which extended considerably beyond the mesial line: indeed, the tendency of the growth was decidedly inwards or towards the right side, much more than to the outer or left side, where it would not have met with such solid resistance.

It was quite evident that all this deformity was produced by an inordinate expansion of the antrum maxillare; that it was not of a malignant nature was more than probable, as the general aspect of the patient indicated rude health; besides the growth had been very slow; the tumour was well defined, and its progress had been wholly unattended with pain.

It was in consequence of the great inconvenience he suffered that he applied at the hospital to beg that something might be done to relieve him. Independent of the deformity produced, deglutition was beginning to be interfered with, and he could not sleep but with his mouth open.

It was now (many months before the operation) that the photograph was taken, from which figure No. 1 is copied, and as it failed altogether to convey a just impression of the antero-posterior projection of the tumour, an attempt was made to take a plaster cast of the head and face, which could not but give an exact idea of the deformity. The patient, however, happening to open his mouth while the plaster was soft and semi-fluid, experienced so much annoyance from the flow of it into his mouth and among the crevices of his teeth, that he again absconded from the hospital on the following day.

He was obliged, however, to return again in the following November (1857). The tumour had continued to increase, and the inconveniences arising from it became more and more intolerable every day. It was now determined on to proceed to operation without delay, that he might not have the opportunity of absconding again.

A full consultation was held, and it was agreed by all that the disease was not of a malignant character, and that all the circumstances rendered the removal of the superior maxillary bone not only justifiable, but necessary. Accordingly, on the 2nd November, 1857, the operation was performed in the following manner:—

The patient being seated in an arm-chair, and an exploratory trial having been first made, to ascertain with certainty, before proceeding to the disarticulation of the bone, that the contents of the antrum could not be fluid (a fact which was determined by the removal of a portion of the anterior wall), an incision was now made, commencing below the inner canthus of the eye, and carried down the side of the nose, round the junction of the nasal cartilage and cheek, and vertically down the lip. An elliptical incision was next made, parallel to the fibres of the orbicularis palpebrarum, and extending from the commencement of the first incision outwards towards the zygomatic suture. The cheek was then dissected off the front of

Fig. 1.
Patient before operation.

Fig. 2.
Patient, eight months after operation.

Fig. 3.
*a*, front of tumour; *b*, part of zygoma; *c*, part of orbital floor; *d*, fragment of sphenoid bone.

the tumour, drawn backwards and outwards, and held so by an assistant. The eye and its appendages were separated from the floor of the orbit, and kept upwards by means of a bent spatula, held by an assistant standing behind the patient. The zygomatic arch was divided by a strong, curved, bone forceps. This required the exercise of considerable strength, but would have been easily effected had the arms of the forceps been longer. The junction of the maxillary with the nasal and lachrymal bones was readily severed with the same instrument, one blade having been first insinuated into the compressed nostril. An incisor tooth had been extracted at the commencement of the proceedings, but in consequence of the encroachment of the tumour beyond the mesial line, it was found necessary to extract the incisor of the right or distal side. The membranous portion of the hard palate was now dissected from the bone by a thin spatula, placed upon the flat, as far back as the velum palati. The alveolar ridge was divided by a small saw in the site of the empty incisor socket, and the separation of the palate plates of the maxillary bones effected by the strong bone scissors, one blade having been applied along the floor of the left nostril, and the other inserted into the cut made by the saw in the alveolar process. The superior maxillary nerve, as it enters the infra-orbital canal, was divided by a scalpel-blade passed flatwise along the floor of the orbit. This was rendered in some degree difficult by the shape of the tumour, which rose in front very much above the level of the orbital floor, as may be seen by a reference to the drawing of the tumour given in the accompanying plate, or an inspection of the tumour itself[a], whereon the attached portion of the floor of the orbit will be seen on a line nearly with the zygomatic process. The same cause created some difficulty in the necessary division of the orbital floor, but it was accomplished by a very strong scalpel blade.

All the bony attachments of the upper jaw-bone had been now divided, and it remained only to dislodge the tumour from its position. With this intention pressure was made on it from above, in the expectation that it would have started from its place, but to no purpose, as it was found to be perfectly immovable. It was next firmly grasped, the thumbs of both hands embracing the upper and anterior conical protuberance of the tumour, and the fingers being introduced into the mouth, so as to take firm hold on the palate and alveolar ridge, and

[a] The tumour may be seen at the Pathological Museum of the Royal College of Surgeons, where it has been deposited.

although it was forcibly swayed upwards and downwards, and from side to side, alternately, it was some time before the tumour yielded in the least degree. At last, by the exertion of repeated efforts and great force, it gave way, but was found, on examination, to have broken across, and to have left behind a considerable portion of the hinder part of the growth, very solidly and immovably impacted in the parts behind and around it.

The removal of this latter portion was by much the most difficult and most anxious part of the operation. It presented a smooth face, or wall, in the seat of the fracture, extending back deeply among vital parts, and in close proximity with great vessels, and was extremely firm and immovable, while it afforded no irregularity by means of which lever or forceps could have gained any advantage. By nicking it, however, in suitable places, with Hay's small saw, both forceps and lever were respectively enabled to take their hold, and it was dislodged in several pieces, but not without some trouble. One piece, in particular, was so firmly incorporated with the front of the pterygoid process of the sphenoid bone as to bring away a portion of it along with itself, which may be still seen attached to the hinder part of the tumour.

The patient, who had endured the several steps of the operation with great fortitude, now fainted, and had to be laid for some time on a mattress, which was ready at hand.

The cut surfaces were allowed to remain exposed to the air until the patient began to recover from the syncope. The amount of hemorrhage on dislodging the hinder and more deep-seated portions of the tumour was extremely inconsiderable, and it was fully expected that, as he recovered from the faint, more or less smart bleeding would ensue. After waiting for some time, however, none appearing, the great chasm which had been formed by the removal of the tumour was carefully packed with pledgets of soft lint, to each of which ligatures had been attached in such a way as to provide for their subsequent removal through the mouth. The flap formed of the cheek was replaced in its natural position, the opposing surfaces of the divided lip were brought into exact apposition by the hare-lip suture, and the remainder of the great cheek-wound accurately secured by numerous points of the interrupted suture.

It had been anticipated that, in the first instance at least, there would have been a tendency in the cheek to collapse or fall in, as a natural consequence of the great loss of substance, and the vacuum thereby caused in the seat of the tumour. All such apprehensions were unnecessary, as it was found that

the tendency of the replaced cheek was altogether to preserve even still more than its natural convexity; a result which followed from the great redundancy of material which had been produced by the stretching of the cheek over the tumour, aided by the elasticity of the parts, which served to preserve much of their original conformation.

The membranous part of the hard palate had been divided just behind the alveolar ridge, and it was inclined at first to flap up and down somewhat awkwardly, so much so that it was proposed to pass a ligature through its free edge, and fix it by bringing it out between the lips of the transverse incision, and then keep it secured on the cheek as long as might be necessary. The idea, however, was abandoned, and the expedient found afterwards to be unnecessary, as the membrane shortly became rigid from the effect of inflammation, and assuming the horizontal position of its own accord, continued to retain it, and did not cause any further inconvenience. The velum palati and uvula were undisturbed, and preserved their natural position.

The patient was greatly prostrated by the immediate effect of the operation. After having been left for some time in perfect quietness upon the mattress on which he had fainted, he was carried on it to his ward and laid on his bed, without allowing him to change his position, or make the smallest exertion. He had been very liberally fed in the morning, and for several preceding days, in order to prepare him as well for the severe trial he had to undergo as for the abstinence which must necessarily follow it, in consequence of the condition of the mouth and fauces sure to be left by the several steps of the operation. He did not seem to stand, therefore, in need of any immediate nourishment. An assistant was left in charge, with orders to allow no strangers near him, and to observe the most perfect quietude.

He was visited again at 6 o'clock P.M., and appeared to have been going on, during the interval which had elapsed, very satisfactorily. He was free from pain, conscious, and able to make himself understood, but still completely prostrated by the shock of the operation. There had been but little reaction; but, what was most satisfactory, there had been no hemorrhage, nor was there any appearance of any tendency to it. As there did not seem to be any occasion for interference of any kind, he was left undisturbed, with orders, as before, to observe quiet, and avoid everything which could excite or disturb him.

10 o'clock P.M. He was visited again. He was free from

pain and there was no appearance of hemorrhage. There had not been much reaction, but he seemed uneasy and restless. An anodyne enema was ordered, with one drachm and a half of tincture of opium, with the view of getting him a good night's rest and tranquillizing the system.

November 3. The morning after the operation. Had passed a tolerably good night; got some sleep; was free from pain; able to swallow some milk; no appearance of hemorrhage; on the whole, going on favourably.

Afternoon of same day. Pulse had risen to 120, and there was a good deal of restlessness and uneasiness; he was now ordered an enema with one drachm of tincture of opium. It is scarcely necessary to observe that the state of his mouth precluded the administration of medicine in any other form.

4th. Had a favourable night; system much tranquillized; doing well; has taken milk and also broth, without much inconvenience; not much incommoded by the discharge from the mouth and nostrils, although he lies, as yet, altogether on his back; two of the needles confining the upper lip were now removed; the lower one was still left undisturbed; he was ordered a repetition of the opiate enema at night, as it was considered most desirable to secure him rest, and to keep up a tranquillized condition of the system, if possible.

5th. Doing well. Had a good night; several sutures were now cut and removed, as a great part of the wound had healed by the first intention; appears more himself, and to be shaking off the great prostration which followed the operation, and had scarcely abated until now. The bowels had not been moved at all since then, and, with the intention of at once stimulating them and conveying nutriment to the system, he was ordered an ample enema of strong broth and olive oil. This acted satisfactorily, while a considerable portion was retained. He got his anodyne enema at night, as it was not thought judicious to withdraw its sedative influence too suddenly.

6th. Doing well; had an easy, tranquil night and a good deal of sleep; is much pleased at finding he can sleep with his mouth shut, as the passage of the nares, which had been occluded for many years, is now permeable by air; pulse down to 84. The last of the hare-lip needles was now removed, and some of the other sutures also taken away.

7th. Rested well. Suppuration from the mouth more profuse. Some of the lint pledgets, which were becoming loose, were now removed. No hemorrhage. He is able to take a fair proportion of milk and strong broth. As his bowels had not been moved since the 5th, he was ordered to have a repeti-

tion of the enema of strong broth and olive oil, to be given with the long tube, as before.

10th. Has been progressing very favourably. Sleeps without any anodyne; is not much incommoded by the discharge from the mouth; is able to get down a fair quantity of nourishment, and takes egg and crumb of bread mixed with his milk and broth. Some more of the lint pledgets have been removed. Pulse down to 76. He was now allowed to sit up in bed.

14th. Doing well. In good spirits, and able to express himself more intelligibly. All the sutures, and most of the lint pledgets, have been removed. He was now allowed to have, in addition to his other diet, some meat finely chopped.

16th. Progressing favourably in every way. The last lint pledget was about this time removed; although a very large cavity remained, there was no collapse whatever of the cheek. Most of the external wound, with the exception of one small piece on the side of the nose, had long since united by the first intention. He expressed a wish for more to eat, and the full diet of the hospital, with extra bread and milk, was at once ordered for him.

From this out, until his discharge from hospital, he went on without any change or symptom deserving of notice. The suppuration from the parts within the mouth, which had never caused him any extraordinary inconvenience, was now moderate, and gradually becoming less. The small spot on the side of the nose, which suppurated, and was the only part of the external incision which refused to unite by the first intention, healed rapidly, and left scarcely any mark even at this early period. The nose, which had been pushed so much to one side, was rapidly regaining its proper position, along with its symmetry. Of the primary incisions there was little trace; the chasm corresponding to the seat of the tumour was still large, but rapidly filling up by granulation. The membranous remains of the hard palate retained the proper position, and was daily stretching over to meet the cheek, in such a way as promised to leave but little deficiency of palate at last. His articulation was gradually improving also, while he could swallow either solids or fluids without any difficulty or regurgitation. But what seemed to gratify him most of all was the ability to sleep with his mouth closed, a luxury which he himself said he had not been able to enjoy for many years before the operation.

This patient returned home early in December by his own desire, in perfect health and wonderfully improved in appear-

ance. At this early period there was very little trace of the extensive incisions, which were unavoidable in order to remove so large a tumour. The left side of the face was still more convex than natural, but as interstitial absorption proceeded, it was daily approaching more nearly to its natural proportions and position, and promised soon to betray but little vestiges of deformity or operation.

The tumour, which is irregular in its form, measured, in its longest diameter, $3\frac{3}{4}$ inches; transverse diameter, $2\frac{5}{8}$ inches; height, from level of palate to apex of the most anterior and highest part, $3\frac{1}{4}$ inches[a]. Such are the actual measurements. When divided in its longest axis it proved a perfectly solid mass, varying in consistency, the anterior portion, which constituted the greater part of it, and which might be regarded as the body, presenting to the naked eye the appearance of a cartilaginous nucleus surrounded by a bony case. The posterior part, which is very irregular in shape, and which had to be removed in detached pieces after the tumour had been broken by the efforts made for its removal, does not amount in bulk altogether to more than about one-third of the anterior or body. The mass is evidently not homogeneous, and this part, which in some degree looks like a process, or congeries of irregular processes from the back of the tumour, is much harder than any other part of it, and harder than bone, turning the point of a very hard drill, and conveying the idea of a gritty material. There is no evidence traceable to determine from what particular point the growth originated, though it was very palpable that it had a decided tendency or inclination toward the mesial line, and the regions beyond it, notwithstanding the greater resistance it must have met with in this direction. It is not easy to reconcile the difference of appearance, form, and composition, between the anterior and posterior divisions of the tumour, with the supposition of a simple deposit or growth gradually expanding the antrum, or to believe them to have been the product of the same process or morbid action. In the anterior mass traces would seem to exist of a bony shell distended by a horny or cartilaginous nucleus, becoming less consistent toward the centre; but this peculiarity of construction, which anteriorly is so well calculated to suggest an abnormal deposit gradually distending the antrum maxillare to an unnatural and inconvenient size, becomes indistinct as we proceed backwards until all traces of a primary wall or case is lost, while the composition of the mass sensibly changes, but

[a] See Plate.

without any line of division or demarcation, the one running confusedly into and being amalgamated, as it were, with the other. It was at first conjectured that the back wall of the antrum had been absorbed in consequence of the pressure exercised by the growth or deposit within its cavity, and that on its removal the deposit had, as it were, broken loose, adapting itself to the varying resistance of the contiguous parts, and thus accounting for the irregular and nodulated appearance of the hinder part of the tumour. This supposition, however, would entirely fail in accounting for the marked difference of composition between what would seem to have been the true original tumour and the growth, so different from it, yet so firmly attached and identified with its posterior boundary. The only explanation of this which would appear at all consistent or satisfactory is perhaps that given in the description of the microscopical character of the disease which follows:—

The tumour having been presented to the Pathological Museum of the Royal College of Surgeons, Dr. John Barker, the Curator of the Museum, examined the different parts of it under a microscope of high power. A copy of the details of the examination, as they were obligingly furnished by him, is annexed, viz.:—

"The anterior portion, forming the bulk of the tumour, is enveloped in a casing of true bone. It is very friable and granular, and exhibits a bony cellular structure, like that presented by a collection of hollow oil globules compressed together, but rather more irregular and oval in form, about 1–300th of an inch in the long diameter. The walls of these cells are made up of closely packed cellules 1–2000th of an inch in diameter, and more angularly irregular, and flat; no true bone cells to be found; and no distinct indications presented by polarized light.

"The posterior portion of the tumour is of a very dense nature, hard, and structureless, even when examined by a power of 600; without bone cells or arachnoid lines. When examined by a power of 400 with the polariscope, it shows a structure somewhat similar to that of horn or ivory, and gives me the idea of having been developed, under great pressure, in a conchoidal manner. On the whole, I think the anterior portion was not malignant; and the posterior part I look upon as a protecting effort of nature, to prevent the ingress of the tumour on the brain."

Whether Dr. Barker's ingenious suggestion be correct or not, it is certain that a very remarkable difference is apparent between the structure and composition of the anterior and pos-

terior portions of the tumour, while it is impossible to assign any line of demarcation between them, so thoroughly do they seem to be identified at the seat of juncture. It would seem probable, too, that this posterior part was not secreted, or deposited from behind, as, on dislodging each of the nodulated processes which terminated it on that side, it came out with a smooth and glazed surface, leaving a cup or bed of corresponding appearance[a], and giving the idea of a ball-and-socket joint. Its identification with the back of the tumour would suggest its origination in that quarter, while the marked difference of its composition and nature would contra-indicate it. It only remains, then, that it must have been deposited from the vessels of the surrounding parts; and if we accept the suggestion of Dr. Barker, which seems to acquire probability from examination and consideration of the subject, we must consider it as a very beautiful instance of the prophylactic powers of nature, exerting themselves to make timely provision for a danger while it was yet at a considerable distance.

Before concluding the account of this operation it may be allowable to state, for the assistance of those who may hereafter be called on to undertake it, the experiences of the operator, so far as this one case was concerned, and his reasons for selecting the mode of proceeding which was adopted.—First, with respect to tying the carotid artery as a preliminary step, although some of the early operators considered it necessary, the experience of many cases has now shown that it may be safely dispensed with, and that it can scarcely be required in any case in which the operation would be justifiable. The actual evulsion of the superior maxilla is not attended with the hemorrhage which might be naturally anticipated from a knowledge of its anatomical relations; but this is the only hemorrhage that need cause any solicitude, as that arising from the division of the superficial parts is under easy and immediate control, and presents no difficulty to the surgeon. In the case which has been recited, the hemorrhage occurring at this stage was, comparatively speaking, almost nothing—but this was probably to be accounted for by the slow growth of the tumour, its dense consistence, and the pressure it exercised on the surrounding parts, which probably may have had the effect not only of compressing, but even obliterating, many of the vessels with which we know that region is so profusely supplied, and which must otherwise have given more or less of trouble. It is not meant, then, to establish any rule on the

[a] The nodule which brought away part of the sphenoid bone was an exception.

circumstances of a single case, which might itself be exceptional, but merely to corroborate the testimony of practical surgeons as to the inexpediency of a measure in itself attended with no inconsiderable severity and risk. Pressure, styptics, exposure to the air, and, when indispensable, the actual cautery, have been found sufficient to command the worst hemorrhage which has as yet occurred in these cases; and when we consider that both upper jaws have now been removed in many instances, without tying a carotid, and without fatal or uncontrollable hemorrhage in any one of them, it does not appear that the tying of that vessel can be necessary as a preliminary measure in any ordinary case.

With respect to the best mode of commencing the operation or the denudation of the bone, as several different methods have been proposed and severally adopted by different operators, it may not be amiss to say a few words here on their respective merits. An indispensable consideration in every case must be the securing of sufficient room, not only for the removal of the tumour, but for getting conveniently at its osseous connexions, so as to separate them readily and effectively, and in every case the operator must be guided in the selection of his plan by the circumstances of the case. The inclination of the growth may and does vary; in some, as in the case just recorded, being inward towards the parts beyond the mesial line and upwards; in others, outwards or downwards, and sometimes, at the same time, in both these latter directions. Accordingly, we find different operators making the primary divisions of the cheek in various ways on different occasions. It would not, perhaps, be possible to predicate absolutely that any one of these is the best; but we may conclude fairly that each chose on each particular occasion the plan of operation best suited to the case he had to deal with. As some of the methods which have been used seem under ordinary circumstances to present advantages over some of the others, the several modes of denudation which have been resorted to may be cursorily noticed here, according to the classification adopted by Dr. Heyfelder in his essay already alluded to.

Having remarked that the operation consists essentially of two acts, first, the denudation of the bone, and secondly, the division of its osseous connexions, he divides the first into three principal methods, subject to modifications, and these he enumerates as—

1. The median incision, from the roots of the nose through the middle of the upper lip.

2. The posterior lateral incision, from angle of mouth to outer angle of eye.

3. The anterior lateral incision, from inner corner of eye round wing of nose and through upper lip.

These have been sometimes variously combined, where it was necessary, from the nature of the distortion, to obtain great room. Occasionally, where only one of them was used, transverse incisions were combined with them, sometimes toward the angle of the eye, sometimes toward or over the zygoma, and sometimes transversely and parallel to the fibres of the orbicularis palpebrarum, the intention being in each case to obtain the utmost possible room with the least possible mutilation.

The mode of denudation which was chosen in the case which forms the subject of this communication, and which, with some modification, corresponds with that distinguished by Dr. Heyfelder as the "anterior lateral incision," was selected from an impression that it not only was the most suitable to the case in hand, but that it presented several advantages over the median and posterior lateral incisions. First, it promised ample room for the removal of the diseased mass, which proved to be the case; then the cicatrices resulting from it, falling to a great extent into the line of natural folds and hollows, are likely to be to that extent concealed, as in the case of the transverse elliptical incision, which corresponds with the natural rugæ of the lower palpebra, and is not at all conspicuous; and that round the ala of the nose, which is completely hidden from view. The remainder of the incision, on the side of the nose and through the upper lip, healing for the most part by the first intention, can scarcely be said to leave a cicatrix, and the little that is visible after the operation in a few years or months becomes almost obliterated. By this mode of section, too, the division and injury of very important parts is avoided; the facial vessels and ramifications of the portio dura nerve, save their extreme terminal branches, escape division. Hence hemorrhage is avoided as well as delay, since no vessel will require to be tied, while at the same time the deformities likely to arise from division of the portio dura nerve will be avoided. The facial muscles also escape division, and the natural expression of the countenance and correspondence of the opposite sides of the face are preserved. These are important considerations, and seem all in favour of this mode of effecting the denudation of the bone, where circumstances allow of the posterior lateral incision being dispensed with.

The division of the zygomatic arch can be accomplished by

a strong forceps. The arms should be long, and the application of a good deal of strength may be requisite, but it is preferable to using the saw, which must be much more distressing than the steady action of the forceps, which accomplishes the object without tearing or shaking the patient. The mallet and chisel, which have been used by some, particularly in the earlier cases of the operation, ought surely to be discarded. They are unworthy of modern surgery, must increase the amount of violence necessary, while it is scarcely possible to conceive circumstances in which they could not be replaced by more scientific and equally effective instruments. In separating the membranous part of the hard palate from the bone an advantage will be found in incising it immediately behind the alveolar ridge, and not, as has been recommended, farther back, near the junction of the maxillary and palate bone. It will no doubt flap up and down at first, an inconvenience which might be obviated by passing a ligature through it and securing it in such a way, before laying down the cheek, as to entirely prevent this inconvenience. But this will scarcely be necessary, since in a very short time inflammation renders it turgid,—it becomes stiff, resumes the horizontal position, and gives no further trouble.

In the case which has been detailed chloroform was not given, for the reasons which have deterred most surgeons from using it in this operation. To prevent in somewise the flow of blood backwards and through the fauces, the patient must, as long as possible, be kept erect. Accidents from chloroform have been said to be most frequent in the erect posture, and reasons have been given for always placing the person to be subjected to it in the horizontal position, as being safer and less liable to casualty; but beyond this, were the blood to flow backward (as more or less certainly will), while the patient were in a state of insensibility, it might flow into the larynx and windpipe, and, the sensibility of these parts being for the time suspended, suffocation might ensue. This contingency is considered by some improbable, but it is possible, and undoubtedly the interests of the patient, as well as those of surgery, require that it should be strictly avoided.

In some of the cases of this operation, already on record, the patient is represented as being up and walking about on the eighth day, and leaving hospital proportionably soon. In the case just recited the patient, though a remarkably strong and healthy young man, did not rally from the immediate effects of the operation for three days. He lay in a state of semi-stupor, listless and passive, and, as he himself afterwards

described his feelings, "stunned" by the operation. After the third day, however, he came to himself rapidly, became cheerful, soon asked for more food, and about the tenth day expressed a desire to be let out of bed. He was not allowed up, however, until the twelfth or thirteenth day, and was not permitted to return home until nearly six weeks after the operation, although he certainly might have left hospital with impunity a good while before that period. He had, however, a long way to go, and it was considered desirable to keep him within view as long as possible.

July 7, 1858. He has been seen on this day. The symmetry of the face is excellent; it requires sharp inspection to detect the cicatrices. The chasm left by the tumour is nearly filled up by granulation; the palate approaches nearly to the lip; both nares are open, and articulation is very good and intelligible; deglutition perfect, save that, if he were to take a *large* drink, he would be liable to some regurgitation through the nose. There is no appearance of any re-generation of the morbid growth. His health is excellent, and his entire aspect betokens a sound diathesis.

On the whole, the result of the operation has been most satisfactory.

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Pathologische Physiologie: Grundzüge der gesammten Krankheitslehre; in Zusammenhange dargestellt.* Von Dr. G. A. Spiess, prakt. Arzte in Frankfurt A. M.

*Pathological Physiology; or, a Sketch of Pathology in general, arranged in a connected form.* By Dr. G. A. Spiess. Frankfort on the Maine: Meidinger, Son, and Company. 1857. Large 8vo, pp. 1129.

It has been generally acknowledged, and very frequently expressed, so frequently indeed as almost to require some apology for its present repetition, that at no former period of its history has medical science experienced so great a change as that which has been brought about during our own times. It were easy to admit that this gradual revolution has been working its way, and extending its operations, through every department of medicine with an all-absorbing interest; and yet, in order that one should realize the entire bulk of this gradual change, and feel and know thoroughly the importance of its principal features, he should, as it were, visit the old schools, and pass in imagination through the entire progress of development which has been effected during the last thirty or forty years. A careful survey of the results which have been developed within this period will, perhaps, exhibit to view a series of more varied and important enrichments in the diagnostic and therapeutic departments, than in the strictly pathological; not that there has been a lack of advancement in respect to the latter, but, comparatively speaking, the improvement which has accrued to the history of morbid processes appears to have been hardly commensurate with that observed in the former, at least until within comparatively few years.

As all sciences have had their origin in practical life, it may be supposed that Medicine, so far from forming an exception

to the rule, was originally simply a practical or applied science, and, according to its nature and designation as a healing art, might have remained even down to our own times an applied science *par excellence.* There arose within it, however, the pure scientific and theoretic spirit of inquiry, that restless element which is so deeply grounded in the nature of the human mind; and, even at an early period of its history, the prevalence and spread of this feeling could be observed, and its influences traced. Having once commenced to operate, its diffusion became the more active in proportion as the science itself advanced through its gradual stages of development,—in fact, according as the experience of physicians increased in the richness and variety of its contributions, and as they themselves learned to apply the advantage of this experience to the improvement of medical principles, as well as to the furtherance of the auxiliary sciences. As a necessary result of this obvious experience, more and more universal laws came at length to be gradually abstracted, in relation not only to organic life in general, but also to the nature, origin, and progress of diseases. Medical science having in this way attained a certain degree of development,—in truth, as soon as the theoretical, thus gained, had advanced to a certain maturity or completeness, the time at length had arrived for the collection and aggregation of the scattered materials into one scientific whole, a systematic unity; and thus we may suppose to have originated the theory of medicine, or general pathology, as a distinct or special doctrine. But no system can be said to be so complete as not to become, after the lapse of a certain time, obsolete; indeed, this condition is impressed upon it by the very nature of progress, for in proportion as new facts become arranged, and new principles established, the older doctrines, however valuable they may be as historical materials, must cease to possess any practical interest; they must be, as it were, once more resolved into their several elements, so that the more fixed and substantial of these may contribute again as part of the material for another scientific structure, while the more volatile and visionary become dissipated in the process of dismemberment. It were foreign to our design to pursue and trace the historical development of our special science in all its particulars during the three great epochs of its existence, characterized respectively by the prevalence of materialism at first, of idealism afterwards, and of vitalism in the most recent period. Suffice it rather that we give a fair and impartial sketch of the comprehensive and elaborate work at present before us, that we endeavour at least to indicate some of the results therein detailed. In the ar-

rangement of these volumes the author tells us that he has "laboured for several years, with a view of bringing into a synoptical aspect, for the improvement of his own knowledge and information, the daily increasing results of individual pathological inquiries." Truly, in a time when special investigations and their results are becoming accumulated to an immense extent and in almost endless variety, the endeavours made by the author to sift and arrange them into one comprehensive grasp, as he has done in this work, will be the more acceptable the more the experiment has hitherto been unattempted by continental writers; and in so far, the present work will doubtless supply an essential desideratum in modern medical literature.

In its general disposition the work may be considered as a sort of cyclopædia of pathology, and is divided into three books, in which are successively arranged the elements or general principles of—(1) phenomenology, (2) etiology, and (3) nosology, —the therapeutic element has not a place here. The first two books treat of the simple elements of diseases, their phenomena, and the diverse conditions of their accession; while in the third are set forth the general laws which appear to exist in relation to the accession of diseases, deduced from the experimental or empirical facts detailed in the two former divisions. In dealing with a work like this, which in its nature is essentially different from a treatise embodying the exposition of individual opinion, it is difficult to condense from any part of it such portion of the *materiel* as will come within the grasp of criticism, or furnish even a convenient extract,—so dependent is each paragraph on those immediately preceding and following, and all the parts are so dovetailed one into another. Indeed, in so large a work we should have desired to see at the end of each chapter or section some kind of concise recapitulation or *resumé* of the leading features treated of therein, if it were only for the convenience of reference. A help of this kind, especially to those reading a work in a foreign tongue, could not fail to be generally appreciated, and would enhance its value as a book of reference, when it is considered that the subjects are arranged, not in alphabetic order, but according to a plan which by reason of its very comprehensiveness is sometimes deficient in clearness. We should also have wished to see, either in the text or in foot-notes, a due space alloted to the names of those who have severally aided in the advancement of our science: a reference to men and their works is always of use, if it were only to serve as furnishing landmarks, as it were, in the history of opinions, discoveries, or contributions. For this latter

omission, however, we must give the author's own apology. "It is to be hoped," he writes in the preface, "it will not be taken in bad part that I have brought forward no literary history, and that in connexion with the several subjects I have not mentioned the names of those men to whom we are indebted for some of the important additions to our knowledge with regard to them. I acknowledge completely the obligations under which I am placed of preserving to each his well-earned property, namely, the honour of having furnished a substantial contribution to the advancement of our science. It is a question of the *history* of science to estimate these services according to their several merits; and in the monographic working out of an object, it is understood of itself that one should unite therewith also a historical representation of the investigations connected with it. Where, however, on the contrary, as in the present case, the matter in question is, how to place together, in a comprehensive view, those results of inquiries which have already, as it were, become the public property of science, it would have been attended with no advantage were I to refer by name to all the works, and the numberless articles dispersed throughout the several journals, in which the most important improvements and discoveries of modern times have been first published; and further, in this way the bulk of the present work might easily have become inconveniently augmented, a matter which is worthy of consideration when we know that there is no lack of hand-books in which a full measure of consideration is given to the literature of our science."

We pass over that part of the first book which treats of diseases depending on derangement of the brain and the cerebral nerves, and turn to the second section—phenomena of disease arising from abnormal action of the spinal nerves. Here we have, as in the other sections of the work, a number of diseases arranged or grouped together in classes, and considered with reference to their several manifestations, thus—1st, morbidly exalted and abnormally excited motor energy, evinced in cramps, convulsions, &c.; 2ndly, morbidly diminished and completely arrested motor energy, as in the various forms of paralysis; and 3rdly, motor disturbances, depending partly on exalted and partly on diminished energy, among which are placed muscular contractions and tremors. We find, for example, among the first of these divisions, placed together for examination, tetanus, chorea, and hysteria, regarding the causes of which even the opinions of the most experienced and sagacious observers amount only to conjectures more or less vague

and undefined; this cannot be otherwise, whilst the proximate cause, the intimate nature of these forms of spasm, that is, the morbid change in the spinal cord itself, on which appears to depend the peculiar rigidity of the muscles in tetanus, the extraordinary origin and diffusion of the muscular movements in chorea, as well as the somewhat similar condition of the reflex movements in hysteria, remains comparatively unknown. Indeed, after much observation we may be said to have only as yet learned to know the individual movements which are wont to precede or accompany these several forms of spasm, and of which we may just assume that they stand in a certain relation to each morbid change of the spinal cord; while it must be left to later inquiry to point out, by the discovery of one or more missing links of the chain, the actual relation and the kind of connexion which subsists between the remote causes and each peculiar manifestation of spasmodic disease. On the causes of the several affections just spoken of, we give the author's remarks in full:—

"Tetanus most frequently appears to arise from causes which are local and peripheral, from injuries and wounds; but it has hitherto been impossible to follow the concatenation of individual incidents, by which such injuries eventuate in this peculiar affection. Endeavours have been made to account for the supervention of tetanus upon injuries in some cases by a consideration of the peculiar nature of the part of the body injured; but it is not always the same kind of parts, whether muscular, tendinous, or highly endowed with nerves, in which wounds are found to induce tetanus. This sometimes succeeds to very trivial wounds, and is on the other hand by no means frequent after wounds in general of whatever kind, so that we cannot conceive that, in order that a wound should induce tetanus, some peculiar circumstance should be added, be it even a complication of the wound or something special in the nature of the latter. It is a well-known fact that a tropical climate predisposes to a peculiar kind of tetanus, but in what manner, or by what changes dependent thereon this happens, has not as yet been investigated. In some cases of traumatic tetanus, the nerves proceeding from the injured part have been found in a state of inflammation; but were even the invariable occurrence of this established, it would yet remain to be shown how the disease arises from such an inflammation of the nerves; for here we have to deal, not with an excitement of the spinal cord, but with the operation of a determinate form of spasmodic affection, and one, moreover, not depending on peripheral irritation. But that a certain relation subsists between such a

wound and the spasm which supervenes, and which, in fact, is brought about by the nervous connexion of the injured part with the spinal cord, is evident from this, that in some cases at least the removal of the disease after it has broken out has been effected by the mere division of the connecting nerves. Among the remote causes of tetanus, particularly of that partial form of spasm, trismus, a rheumatic condition of the system has also been enumerated; it appears that in some cases the application of cold has decidedly predisposed to the occurrence of tetanus; but it has not yet been explained in what manner or by what means tetanus and trismus arise in such cases; while, as regards the so-called rheumatic process, its intimate nature is almost as little known as that of tetanus.

"*Chorea* occurs almost exclusively in the age of childhood and youth, while the process of growth is rapid. Frequently in chorea one of the cervical vertebræ is found to be tender and painful, and although on that account the inference is by no means to be drawn that congestion or inflammation at the place indicated was the efficient cause of chorea,—whilst from such causes, perhaps, the origin of cramps in general, but not of this peculiar form of spasm, might be explained,—it remains still probable that a certain abnormal, perhaps too rapid or disproportionate development of the dorsal vertebræ, which may easily be accompanied by congestion, co-operates in some way as a powerful causative impetus to its production.

"General debilitating causes, previous diseases, onanism, and the like, to which a great importance has been attached as causes of chorea, have an influence only on the general bearings of nervous diseases, by inducing or keeping up a greater excitability of the whole nervous system, nevertheless without affording sufficient reason why disease should assume this form in particular. The causes of the partial forms of chorea, such as cramps of the fingers, the so-called writers' cramp, and certain kinds of stammering, are not less obscure. The latter may frequently have its origin in mental excitement. Finger cramp, on the other hand, and writers' cramp, appear chiefly to result from an excessive and prolonged effort of some one kind, as we see them only in those who have employed their fingers either in writing, or some analogous constrained movements within narrow limits.

"*Hysteria* finally is by far the most frequent of the forms of spasm arising from morbid constitution of the spinal cord, and accordingly, its causes must be of more extensive and frequent occurrence. In fact, everything which tends to debilitate the body generally, and the nervous system in particular, thereby

inducing a proneness to excitement, appears to lay the foundation of reflex spasms. The peculiar character, however, and the unusually wide diffusion of the varied forms of spasm exhibited in hysteria, appear to stand in a special causal relation with a defective activity of the brain, with a diminished energy of the higher faculties of the mind, and chiefly of the will. According to this view, hysteria receives an essential elucidation from the well-known experiments with decapitated and narcotized frogs, in which the dominant influence of the brain upon the spinal cord is arrested, and in which, therefore, the smallest peripheral excitement, even slight touches upon the skin, are sufficient to induce vigorous and widely diffused reflex spasms of all the voluntary and many of the involuntary muscles."

We pass on now to the second book—the etiological portion of the work—which is subdivided into three comprehensive sections, viz., 1. The changes of organic form and combination as conditions of morbid vital actions; 2. Vital energies considered as conditions of diseased action; and 3. The operations of external agents as conditions of morbid processes in the system. In casting a glance over that portion of the work comprised in the lengthy chapter on the morbid changes of the blood and lymph, in order to place together in review some of the principal results of the author's inquiries, it should first of all be stated that he considers a true and general polyemia, an absolute increase of the collective mass of the blood, to be as yet incapable of direct demonstration, however probable in many respects its existence may be—at all events, that it can never attain to any considerable height; whilst the opposite condition of oligemia, an absolute diminution of the circulating mass, takes place very frequently, and in all degrees. As regards the *quantitative* variation of the several constituents of the blood, the amount of water may likewise be absolutely either increased or diminished, although both these changes are almost always transitory and evanescent; an absolute increase of the blood corpuscles alone, on the contrary, and even more so of the albumen, is not only doubtful, but very improbable, while an absolute diminution of both these most essential constituents of the blood is a fact of certain and frequent occurrence, and moreover, an important cause of many morbid phenomena. In this respect the fibrine is differently circumstanced, this element being found in some diseases to be often in a high degree absolutely increased, while also it is by no means unfrequently absolutely diminished, although in a less proportion. The salts of the blood, which stand in most inti-

mate relation to its chief essential organic constituents, the blood corpuscles and the albumen, appear like these, and with these, to undergo no absolute increase, but frequently suffer a considerable diminution; whilst the fats, which he looks upon as mere casual admixtures, appear to be subject to considerable fluctuations. Of the alterations of the so-called extractive of the blood, nothing definite or satisfactory is announced, and the changes of the gaseous contents, i. e. oxygen and carbonic acid, are in a similar predicament.

*Qualitative* variations are described as being known as yet with regard to two constituents only, viz., to the blood corpuscles (partly based on facts and partly rendered probable by their deportment in the blood after its withdrawal from the vessels), and to fibrine (shown by its diverse modes of coagulation); but regarding the conditions as well as the casual consequences and effects of these qualitative variations, considerable obscurity appears to exist. Further, in respect to the foreign matters which occur in the blood, the dyscrasiæ arising from a retention of the essential constituents of bile and urine, as well as of sugar in the blood, may be looked upon as fully established by undoubted facts, notwithstanding the uncertainty which attends their origin, not less perhaps than their effects. Of much higher import, however, is that of pyemia and putrescence of the blood, which become the essential causes of the different forms, or rather species, of fever, especially the acute exanthemata, typhus, intermittents, &c. Indeed, we are justified or even constrained by the present state of knowledge to recognise such changes; as regards, however, their peculiar nature, we can form but vague conjectures, nor are their causes or their proximate effects quite understood.

"It must appear almost incomprehensible," the author says, "considering the defective state of knowledge regarding the morbid changes of the blood, that at a very late period some have believed they could explain, not perhaps the individual morbid phenomena, but entire morbid processes, by a reference to such blood changes alone, and that they were able to found their entire pathology upon the comparatively uninvestigated doctrine of the dyscrasiæ. Nevertheless, this has happened very lately, and in a school to which we are indebted for the most varied and copious results of strictly experimental investigation, and which in other respects insists on a purely empirical management of pathology, but which, forsooth, confused by the ontological views of more recent times, and attaching a partial value to the results of pathological anatomy, has laboured in no very equal measure to resolve the incidents of disease

so far into their individual elements as appears to be indispensably necessary to an accurate knowledge of them.

"The transient intoxication of this latest Doctrine of Crases (Krasenlehre) having already given place to a more sober comprehension of things, its bewildering effects, nevertheless, are not yet so completely overcome as to render a critical examination of some at least of its fundamental defects quite out of place. This newest Crasiology errs, for instance, in this, that in its interpretation of the morbid incidents of life, it gives too wide an extension and attaches by far too much importance to the blood-changes; that it assumes and supposes numerous changes of the blood, numerous so-called crases, of which all foundation in fact is wanting, and of which, therefore, in cases where only the actual proof was to be alleged, no account whatever could be given, and that it quite overlooks the various other and often far more important conditions of disease,—but in this also it errs, that it contemplates the morbid changes of the blood almost universally, as originating *primarily* and immediately from external, or else from inscrutable internal causes. It is an evidence of great presumption that the Vienna school has ventured to construct a new humoral pathology on the hitherto very inadequate knowledge of the morbid changes of the blood, as well as on those blood changes revealed by cadaveric inspection,—a pathology which for defectiveness is not surpassed by any of the older doctrines of the same kind; still further, there is evidence of greater self-sufficiency in the fact, that it does not make the least attempt, indeed it scarcely appears to feel the necessity, of searching after the nearer and more remote conditions of the sundry deviations of the blood from its normal state, but looks upon these, in short, as already existing, as arising spontaneously; and further, that from these the most varied morbid changes of the other parts of the body are to spring.

"From the foregoing investigations it has resulted, on the contrary, with more probability that, with exception of those dyscrasiæ (quite unknown in their nature, although necessarily supposed or assumed) which, being excited by contagions and miasmata, include the essential causes of exanthemata, typhus, &c., all other morbid changes of the blood—whether they consist in quantitative or qualitative deviations of the blood itself, or in the admixture of foreign matters therewith, essentially occasioned by preceding disturbances of vital actions—are more or less necessary consequences of the morbid conditions, and are not to be considered as primary and original, but secondary alterations. By this, of course, the dyscrasiæ lose

nothing of their significance as a condition of many and serious incidents of disease; but they proceed therewith only in the places in fact belonging to them, and become, with so many other morbid changes of the solid parts, equally essential features in the various, often very highly developed series of morbid phenomena, which are very frequently the effects rather than the causes of other phenomena, and in whose changing concatenation, as may be further shown, the concrete diseases originate. Hence also arises the indispensable necessity of investigating more attentively and assiduously these conditions of the morbid blood-changes; they are, however, as yet but very imperfectly understood, and only by degrees as we proceed further in these inquiries can we hope to attain a more intimate knowledge and perception of many other dyscrasiæ, whose existence we have sufficient grounds for assuming, although from want of accredited facts we are unable at once to adopt them as already established.

"With regard to the *operations* of the dyscrasiæ, the later humoral pathology has been guilty of the greatest errors. Just as the older ontologies regarded diseases generally as peculiar essences, which, being regulated and controlled by arbitrary laws, or even by mere caprice, called forth this or that phenomenon in the organism,—so also does the present humoral pathology assign to the dyscrasiæ the power of regulating and governing in the organism. All expressions of disease which originate in the existence of such a dyscrasia in the body are truly at the most only made conditional by it; and we view as an independent fact of the dyscrasia itself only this, that it admits of their proceeding from it. In this way an undisputed tubercular crasis gives rise to the development of tubercle in some one or more organs; a somewhat more doubtful albuminous crasis produces a cancerous tumour; the hydremic crasis induces dropsy, &c.; that is to say, in short, the crasis localizes itself,—although it is not said the crasis *is* localized,—and upon this *localization of the crases*, which plays a very important part in the new humoral pathology, several more or less arbitrary laws have been founded.

"Upon a more strict and circumspect consideration of the facts which have a comparatively real foundation thereon, the operations of the morbid blood-changes appear, on the contrary, in quite another light. A foreign matter arrived in the blood, or even originally arising within it, must by its nature operate upon the nerves and the other solid parts with which it comes in contact by means of the blood, just in the same way as if it had come in contact with the same parts by ano-

ther way. It is not on that account to be disputed, that it is but few of these foreign matters that can be said to have an elective affinity for certain textures and parts of organs, or, when present in the blood, should be attracted by these in a manner similar to that in which urea is attracted by the kidneys; bile is attracted, or at least arrested, by the liver; and that it is not in this way that foreign substances occurring in the blood could be capable of effecting any very determinate local manifestations. Unfortunately, however, we are not acquainted with any of these foreign matters, and therefore can know nothing about their casual affinities to this or that texture; moreover, we should only obstruct the way to our further comprehension of them, were we to accept as indisputable the local manifestations in typhus (for example), or in the acute exanthemata—which possibly may depend upon causes of quite a different nature,—had they their exclusive foundation in a particular affinity of the typhoid matter to the intestinal canal, or of the eruptive matter to the external skin or the mucous membranes, were they in fact mere localizations of the typhoid and eruptive crases. In like manner may an unusual richness of the blood in fibrine, perhaps rather a qualitative deviation of this element, give rise to coagulations and depositions of the same within the vessels, whether in the form of granulations on the heart-valves or of exudations on the lining membrane of the vascular tubes, or lastly, as obstructive coagulation in the smaller vessels; but here not only must the cause be looked for in the peculiar constitution of the blood, but, as in the former case, it was the peculiar chemical or other condition of the individual textures which arrested the foreign matters of the blood, so, here also are there certain local conditions of various kinds, through which the course of the blood is impeded, or the inner coat of the arteries is diminished in smoothness, which tend to bring about such fibrinous depositions, and which, when present in a greater degree, will produce quite the same depositions, even without any morbid change of the blood from its normal state as regards the amount of fibrine. In all other cases the local morbid phenomena which arise from dyscrasiæ are in much greater degree, and in more ways, dependent on local disturbed actions in the solid parts; the dyscrasiæ are here only joint conditions for the peculiar form under which the casual products of such disturbances appear. That pneumonia is not the localization of a supposed former hyperinotic crasis, but that inversely the hyperinosis is only the consequence and effect of the pneumonia, as of any other more violent inflammation, will be shown fur-

ther on, and thus it is also with every other inflammation. It cannot, however, be denied, that the product of pneumonia and every inflammation product, every inflammatory exudation, is essentially effected by the present constitution of the blood, and is capable, according to this constitution, whether considered quantitatively or qualitatively, of assuming a very different form; and herein lies the essential significance of the so-called dyscrasic inflammations. It is at all events very doubtful whether certain dyscrasiæ, perhaps by virtue of some affinity of peculiarly hostile substances to certain tissues of the body, can of themselves be considered as sufficient causes of inflammations; but no one doubts that an inflammation otherwise excited in a dyscrasic body, by virtue of the peculiarity of the original inflammation products, runs a peculiar course, and presents a peculiar character. As with inflammation, so also is it with other disturbances of the circulation, that is to say, the different kinds of congestion and the abnormities of secretion to which they often give rise. Never, perhaps, or at least very seldom indeed, are they originally called forth by an existing dyscrasia; but, having been excited by other causes, they may be kept up by the dyscrasia, and at all events their consequences are modified thereby. Thus also, an important polyemia may induce more vehement manifestations of local congestion, only on the condition that some parts of the vascular system offer less opposition than others, or that another cause existing out of the blood attracts this fluid stronger to one part than to another; but a congestion thus originating will be more persistent and severe during the existence of polyemia than under opposite circumstances. An absolute augmentation also of the aqueous constituent of the blood can of itself, during its continuance, only keep up a more active elimination of water through the kidneys, lungs, and skin; whereas an *effusion* of water into any other part of the body could only result from some obstruction to the action of those natural emunctories. A mere relative increase of the watery constituent, however, a hyperemia from diminution of albumen or of blood corpuscles, can of itself have as little effect in causing a dropsical effusion as in augmenting the secretion of urine. Should, however, a plethoric condition of the vessels of particular parts of the body take place, or an obstruction of the circulation in such hydremic dyscrasiæ from other causes, the result would be that the excretion of water would take place the easier, the poorer the blood is in solid constituents.

"Finally, this modern humoral pathology has played a most

arbitrary and unscientific part with the so-called metastasis (Umsetzung) of crases, and in this, as a necessary consequence of the entire doctrine, its fundamental errors may be most easily recognised. The substantial and accurate part of the doctrine consists in this, that the morbid blood-changes do not remain always the same; that they, as far as they are accurately known, become altered again in the course of the same disease, in fact even become metamorphosed into those of apparently or really opposite kinds. The erroneous part of the doctrine, on the other hand, consists in this, that this very metastasis of crases is looked upon too much as the mere localization thereof, and in fact as an operation of the dyscrasiæ themselves. Thus, for example, hyperinosis is said to change through separation of fibrine, as well as through exhaustion, into the opposite condition of hypinosis, and further into hydremia. But inversely the assumed dyscrasia of drunkards, distinguished by a deficiency of fibrine, also the typhus-crasis, is supposed to become changed into hyperinosis, and to give rise to genuine inflammation. The modern crasiology is naturally at a loss to account for these metastases; indeed, there is an evident contradiction in supposing that a separation of the fibrine, which is occasioned by an excess of this element, should continue even to the production of a complete defibrination of the blood. If, however, we adopt the opinion that the hyperinosis is only the consequence, and not the cause, of the inflammation, then may it be just as well conceived, how always according to the course of the inflammation a general impoverishment of blood and a true hydremia may follow thereon, as that even in typhus and among drinkers a true inflammation like pneumonia can originate from a sufficiently active inflammatory attraction. Other crasic metastases, among which the later appear to be only higher degrees of the earlier, as the origin of the septic crasis is from the pyemic, or even the typhoid and eruptive, may have their foundation with some possibility in the blood itself, and may be occasioned by the progressive influence or peculiar transformation of the morbific matter admitted into the blood,—although upon this nothing determinate can as yet be pronounced; but in them also we should not neglect the influence of other existing vital disturbances, and of the much deranged actions of the solid parts; at all events it would evince a great partiality were we to attempt an explanation of these sundry alterations which the constitution of the blood suffers in the course of deeply seated and protracted diseases.

"Nothing has contributed so much to throw suspicion on

the whole doctrine of the morbid blood-changes, and to lessen our interest in its investigation, as the exaggerations which have been used with regard to it from different sides. After the first surprising results which the investigations of the blood in disease afforded, some believed that the problem of a number of diseases was already solved, nor did they consider that they had only just entered upon an entirely new path in the field of science, which was to conduct to the most important discoveries, and which, while it promised fruitful consequences, presented at the same time many difficulties which at the beginning were hardly anticipated, or were at least not to be accurately estimated. And yet it was believed that in the blood alone we should seek the source of *all* diseases, this being the *fons et origo* of all normal formation, without considering that in the organism, when once developed, all its parts, together with their several actions, have a determinate state of reciprocal dependence one upon another, and that consequently nothing but a due estimation of this reciprocity can lead us to form an accurate judgment, either of the normal or of the abnormal morbidly altered phenomena of life and their conditions."

To attempt an analysis of the nosological treatise which forms the third and concluding portion of this work were unnecessary, inasmuch as its substance is essentially the same as that of the two preceding parts, differing from them only as to the method in which its materials are arranged and applied.

We trust that the extracts we have given may furnish some general idea of our author's mode of dealing with his subject. In conclusion, we feel assured that, notwithstanding the defects which we have pointed out as calculated to detract from the value of the book as a work of reference, our readers will find throughout Dr. Spiess' pages a large amount of practical information, which, however difficult it may be in some instances to arrive at, owing to the diffusiveness of the style, will, nevertheless, repay a diligent research. As a digest of the present state of knowledge, it must occupy an important place in the literature of modern medicine.

*An Essay on Wasting Palsy* (*Cruveilhier's Atrophy*). By WILLIAM ROBERTS, B. A., M. D. London, Physician to the Manchester Royal Infirmary, &c. With four Lithographic Plates. London: Churchill, 1858. 8vo, pp. 210.

THE absence hitherto of any distinct treatise in the English language, on the subject to which this essay is devoted, and the difficulty that had to be encountered in attempting the study of the disease, both from the papers which had been published on it being scattered through various journals, and from the necessity for eliminating the facts from the many erroneous inferences with which they were sometimes surrounded, caused us to give a ready welcome to a volume whose purpose was

"To bring together within a convenient compass, and in a convenient form, all the information the writer could lay hands on concerning this peculiar species of palsy."

We congratulate Dr. Roberts on the manner in which he has supplied the gap in English medical literature which he states it to be the ambition of his Essay to fill. The *completeness* with which he has investigated the subject, the variety of facts and cases he has collected and analyzed, the minuteness of the details, and at the same time the elegance with which they are described, along with the soundness of the views as to the pathology and treatment of the disease that he has inculcated, leave little to be desired, and induce us to cordially recommend the work to our readers.

Wasting palsy, or Cruveilhier's atrophy, in compliment to the eminent pathologist who, though not first in the field, has done most to elucidate the nature of the disease, are the terms, as not involving any theory, that Dr. Roberts prefers for designating the affection treated of—one which, short as is the time since it has taken rank among recognised diseases, is rich in names. Preceding writers, he says, endeavoured to square their nomenclature to the opinion they held as to the essential nature of the disease. Were he inclined to follow the same rule he would call it "*idiopathic degeneration of the voluntary muscles*," but as this is too cumbrous, and may not prove correct in the end, he has substituted the more homely name of "*wasting palsy*."

The volume is divided into ten chapters, of which the first is devoted to a rapid historical sketch of the disease, and gives an account of the opinions as to its nature held by the principal authors who have observed it. The second describes the general physiognomy of the disease. In it we have first de-

tailed, as typical cases, the five that came under the author's own observation; then the remarkable one of Prosper Lecompte, from Cruveilhier's second memoir to the Academy, read in December, 1855; and then that described by Dr. Thomas Valentiner. A vivid idea having been in this manner presented of the gradual loss of power and diminution of volume of certain groups of muscles constituting this peculiar form of paralysis, the chapter concludes with a table giving a summary of all the undoubted cases the author has been able to collect. Altogether they number 105. They are arranged, as proposed by Aran, into two groups, "*partial*" and "*general*," and, notwithstanding the imperfect manner in which some of them have been reported, they may, in Dr. Roberts' opinion, be confidently looked to as affording data for laying a firm foundation for the entire pathology of this curious malady.

The third chapter treats of the "*anatomical distribution and symptomatology.*" It appears that, of the 105 cases collected in the table, 60 belong to the partial and 45 to the general form; but Dr. Roberts has reason to believe that the partial form is relatively far more common than these numbers indicate; indeed, he says cases of atrophy of a limited group of muscles are within the experience of nearly every practitioner, while *general* wasting palsy is unquestionably a rare disease.

Sir Charles Bell believed that in this disease it was universally those muscles which were combined in action that were affected. To this, however, Dr. Roberts has found many exceptions; in several instances the triceps retained its full vigour when all the other muscles about the elbow had suffered destruction, and in the second of his own cases the extensor internodii pollicis continued active fourteen years after the other muscles of the thumb had vanished. Commonly, however, when the destroyer falls on a muscle, all its comrades are specially involved.

In no case yet published have all the muscles of the body been found implicated in the same individual; the muscles of mastication and those of the eyeball have not been yet known to be affected, and the muscles of organic life seem to be altogether free from its ravages. But the head has fallen forward on the chest, the limbs have hung lifeless, the tongue has failed, the voice has been reduced to a single note, the face has been expressionless, the still conscious mind only finding utterance through the movements of the eyes, till finally death has been brought about by the failure of the diaphragm and intercostals.

When the atrophy is *not general*, certain parts of the body

and certain groups of muscles are much more obnoxious than others to its inroads. Dr. Roberts has analyzed 60 cases of the partial form, and formed a table exhibiting the ratio of the liability to attack of the different parts of the extremities.

"The muscles of the trunk," he has found, "are less liable than those connected with the extremities, while of the latter the muscles of the upper limbs are far more liable than those of the lower. Of 62 cases in which the atrophy was either undoubtedly partial, or only faintly foreshadowed an extension to the trunk, the upper extremities were alone the seat of the malady 51 times, while the lower were exclusively affected only 5 times, and the upper and lower together only 7 times. The right arm is much more frequently attacked than the left, and the hands oftener than the shoulders. . . . . From the figures of this table flow the following additional conclusions:—That as a general rule, when one limb is attacked, its fellow on the opposite side shares its fate; that, when the disease is unilateral, the right side is more likely to be its seat than the left. This is especially the case when it invades the hands, but far less so in the upper arms and shoulders, and the distinction disappears altogether in the lower limbs."

Dr. Roberts also points out the capriciousness and uncertainty of the line of the attacks of the disease, but shows that while it has its favourite combinations, there are some that it habitually avoids,—facts of great interest in a pathological and practical point of view.

"The *symptoms* are considered under the heads of lesions of mobility, and of sensibility. The loss of power corresponds in the typical cases to the grade of the atrophy of the muscle; and inasmuch as the muscle goes on decaying slowly for months and years, its force declines at the same deliberate pace, so that it is only in extreme cases that any part is reduced to absolute immobility. More commonly the movements are still capable of being executed, but with so feeble a force as to be of no service to the individual. The correspondency here claimed between the bulk of the muscle and its contractile power is a distinctive feature of the disease, and serves to separate it in a marked manner from hemiplegia, paraplegia, facial paralysis (of Bell), and indeed from any palsy depending on an injury to the cerebro-spinal centre or a nervous trunk. In these latter the loss of power is sudden,—generally instantaneous, and seldom delayed beyond a few hours or days,—and the subsequent wasting of the muscles, if there be any, holds no proportion whatever to the loss of power; but here, as the degeneration advances *pari passu* the strength abates, and it is not altogether abolished until every fasciculus and every fibre is destroyed, while to the last the muscle remains obedient to the calls of the will."

In uncomplicated cases this holds true to the letter, but in

others it is not so manifest, and certain symptoms are observed which Dr. Roberts attributes to the reflection and radiation of impressions at the spinal centres.

*Muscular vibrations* are the most remarkable of the secondary or unessential symptoms. They were first observed in the famous case of Lecompte. They are rarely absent when active atrophy is going on.

"They make their appearance as little convulsive twitchings or quiverings of individual muscular bundles; they do not impart any movement to the entire muscle, but spring beneath the skin in quick momentary tremors, undulating over the surface of the muscle. . . . . An examination of the table of extracts shows that fibrillary tremors are not universally present even during the active stage. . . . . Nor are they altogether unknown in other palsies and muscular degenerations."

Cramps and twitches are next considered, but as occurring rather as complications than as forming an essential part of the symptomatology of the complaint; and Dr. Roberts confirms in a great measure the statements of Duchenne as to the electric contractility of a muscle undergoing Cruveilhier's atrophy, gradually dying away with the voluntary power, and not altogether failing until the muscle is annihilated.

As to *lesions of sensibility*, in uncomplicated cases there are none whatever. In some cases tactile and common sensibility have been slightly altered, and in others pain has been complained of, and also an unusual sensitiveness to low temperatures. And except the nutrition of the affected muscles, all the intellectual and organic functions are performed with the utmost regularity.

Chapters IV. and V. are replete with interesting and important details as to the invasion, course, duration, and termination of the disease, and the conditions of its origin and etiology. Over these we must pass, noticing only the greater frequency of its having its starting-point in the upper than in the lower limbs, and in the right than in the left, and the remarkable fact that when it begins in the lower limbs it has a great tendency to become general; and the fact that the general form seeks its victims among children, among adults, and in advanced age; whereas the partial form very rarely affects individuals under adult age, or over fifty. Sex and consanguinity, too, seem to exert an important influence. Of the 99 cases in which the sex has been stated, 84 were males, and 15 only females—a difference depending probably, as suggested by Dr. Roberts, on the greater and more sustained muscular

exertion which men's occupation demands—for it appears women working at certain employments are not much less liable than men who are engaged in kindred occupations. The influence of consanguinity is greatest in the general form of the affection. It is remarkable how frequently the proclivity passes through females to appear in their male descendants. Of the special determining causes, three are most important. Of 69 cases, 25 are attributed to hard work, in one guise or other; 16 to cold, or cold conjoined with wet; and 18 to hereditary predisposition. Other causes have been doubtfully put forth, as scarlet fever, typhus, rheumatism, syphilis, &c., but they seem to have been merely antecedent circumstances.

Chapter VI. is devoted to the post-mortem appearances. Hitherto all the instances of Cruveilhier's atrophy examined after death have been of the general type. The essential mischief has been always looked for, and found in the nervo-muscular system of animal life. The muscles are atrophied, and for the most part have undergone fatty degeneration, both in the interstitial and molecular forms; there is always, however, a great difference in the extent to which this change has taken place, not only in neighbouring muscles, but even in the several fasciculi of the same muscle. In some instances the degeneration would seem entirely granular, and at no time fatty; in others, fat is present in larger proportion, and sometimes it is exceedingly abundant, so that Meryon's designation, "fatty and granular degeneration," is the correct one.

The alterations found in the nervous system were by no means constant. The brain and medulla oblongata were free from disease in every case examined. In 9 out of 13 autopsies the spinal cord was sound, in some, even the microscope failing to reveal anything abnormal. Of the 4 in which morbid states were discovered, there was more or less extensive softening in 3; and in the fourth (Virchow's) there was amyloid degeneration. Great importance attaches to the condition of the anterior spinal roots, in consequence of Cruveilhier's observations. In his two cases he found them atrophied. Schneevoogt and Valentiner found them in the same state in one case each, along with softening of the cord; and Dr. Roberts quotes from Dr. Reade's very excellent description, published in this Journal for November, 1856, of the case that occurred in his practice, an allusion to a case that was examined in the Belfast workhouse, as the only further confirmation of Cruveilhier's observation. On the other hand, it appears that in five cases in which this alteration was specially looked

for, it did not appear. These are detailed by Dr. Meryon, in the Medico-Chirurgical Transactions; by Landry, in the Gazette Médicale; by Oppenheimer, in the same; by Virchow, in Virchow's Archiv; and by Laboulbéne, in L'Union Médicale. The existence of these five cases we believe, with Dr. Roberts, to be a fact of capital importance in the discussion of the pathology of wasting palsy.

In 6 cases the peripheral nerves were examined; in 3 the motor nerves were more or less atrophied, probably a secondary change. In 2 no change was found. In 2 the sympathetic in the neck was examined; in one, Landry could discover nothing abnormal; in the other, Schneevoogt found that part of the cord in the neck, the lower cervical and some of the thoracic ganglia, had undergone fatty degeneration, a condition that had been diagnosticated during life from the contraction of the pupil.

Having discussed the several points we have indicated, the author next considers, in chapter VII., the "nature" of the disease, and in doing so limits himself to the consideration of two questions: first, what is the precise seat of the initial lesion? and secondly, what is the proximate seat of that lesion? In answering these questions Dr. Roberts affords another illustration of the truth of the great principle we have often advocated in these pages, of the individual and inherent life of each tissue and element in the body.

"To the muscles," he says, "themselves, therefore, we must look for the primordial phenomena of wasting palsy. This opinion is held by Duchenne, Aran, Oppenheimer, Wachsmuth, and Dr. Meryon. . . . Of the nature of the blight that withers the muscles, I am only able to say, with Dr. Meryon, that it is a fatty and granular degeneration of the muscular fibre, similar (often at least) in its anatomical bearings to what is observed in fatty heart, or in muscles which have degenerated from section of their nerves. There would seem to be an error of nutrition in the muscular fibre, not dependent, as Dr. Meryon thought, on a general depression of the nutritive functions—these being almost always in their highest perfection—but brought about under the influence of a peculiar constitutional predisposition or diathesis, by the aid of one or more of the special exciting causes mentioned in chapter V.

"That the entirety of the disease is not comprehended in its local manifestations, and that a constitutional predisposition lies behind these, is made evident by the transmissibility of the disease from parent to offspring; and also by the total inadequacy of the exciting causes, acting alone, to produce the series of events which characterize wasting palsy. An additional proof is seen in the bila-

teral symmetry of its march. This symmetry, although by no means constant, or always exact, is quite as remarkable as anything presented by pulmonary tubercle, articular rheumatism, or syphilitic or other eruptions of the skin."

It would be impossible in the limited space at our command to do justice to the able arguments by which these conclusions, in which we fully concur, are supported; for them we must refer our readers to the book itself. The facts we have already noticed seem to us to be sufficient to establish their truth.

The diagnosis and prognosis of the disease are next fully treated of in chapters VIII. and IX. As to the prognosis, Dr. Roberts is more hopeful than most preceding authors. In the diagnosis we have to bear in mind the atrophy from section of, or pressure on, a nerve, and from any cause necessitating a state of continued rest. But the real difficulties of the differential diagnosis lie, it is said, in the separation of lead paralysis from that palsy which sometimes follows the so-called vegetable colic (endemic colic of hot countries). Lead palsy has strong resemblances to Cruveilhier's atrophy. The limited groups of muscles affected, the wasting, and the similarity in the parts attacked, may be specified, but then there is the suddenness of the invasion, as well as the history and lead cachexia, to distinguish the two diseases. Besides, lead palsy affects the extensors chiefly, the flexors escaping altogether, and the wasting is very distinctly *posterior* to the failure of strength; and, according to Duchenne, a muscle palsied by lead loses entirely, in a great part, its electric contractility; whereas in wasting palsy it responds to the electric stimulus in a degree proportional to its bulk.

The treatment is considered in the tenth and last chapter. Those who regard the disease as having its origin in the spinal cord or nerves apply their remedies over the vertebral column. Dr. Roberts says there is no evidence that benefit has been derived from this plan, and often its futility has been most apparent. When improvement has taken place, other remedies have been employed at the same time. Remedies intended to act on the system at large are beneficial when any decided taint has been observed, as syphilis or scrofula, which is very rarely. The remedies that he believes most worthy to be relied on are, methodical exercise, and cold, mineral, and douche baths, which, however, must not be used indiscriminately; thermal and sulphur baths; frictions, with stimulating liniments; galvanism in Duchenne's form—Faradization[a], for the proper con-

[a] See the present series of this Journal, vol. xii. p. 301.

duction of which directions are given. Above all, the exciting causes of the disease, especially over-work, must be avoided, and the treatment must be commenced early to have any prospect of success.

We cannot close our notice of this admirable monograph without again recommending it to our readers as a complete and masterly exposition of the history, pathology, and treatment of a puzzling and not very infrequent class of cases, concerning which it has hitherto been most difficult to obtain any correct information.

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*Sympathetic Nerve.* By J. Drummond, M. D., Edinburgh. Article in the Cyclopædia of Anatomy and Physiology, Part xlvii. August, 1855.

*On some of the more Obscure Forms of Nervous Affections, their Pathology and Treatment; with an introduction on the Physiology of Digestion and Assimilation, and the Generation and Distribution of Nerve Force, based upon Original Microscopical Observations.* By Harry William Lobb, L. S. A., M. R. C. S. E. London: Churchill. 1858. 8vo, pp. 312.

*The Ganglionic Nervous System, its Structure, Functions, and Diseases.* By James Geo. Davey, M. D., M. R. C. S. E. London: Churchill. 1858. 8vo, pp. 309.

(*Continued from* vol. xxv. p. 441.)

II. We have placed Mr. Lobb's book second on our list, because we wish to bring a theory that he discusses under notice in connexion with the conclusion of Dr. Drummond's article, as it chiefly relates to the nature and mode of the influence exerted by the nervous system over the vegetative functions. Rather than break the train of thought, we shall proceed at once to notice the theory, and allow the consideration of the general character of the work to stand over for the present.

The theory of the correlation of physical forces, proposed by Mr. Grove a few years ago, opened a new field for investigation, and has been the means of establishing relations, and leading to inductions of great importance. In the additional notes appended by Sir Benjamin Brodie to the account of his physiological researches republished in 1851, he, with his unvarying zeal for the advancement of physiological science, has suggested the application of the results obtained by Mr. Grove and Dr. Carpenter to the formation of a theory of nerve force.

Mr. Lobb has taken the suggestion, though without any kind of acknowledgment, and on it raised the superstructure that we have now to bring under the notice of our readers.

The passage we refer to in Sir Benjamin Brodie's work will be the best introduction we can give to Mr. Lobb:—

"It has been shown by Mr. Grove," says Sir Benjamin, "that there is great reason to believe that the physical forces to which we refer the ever varying phenomena of inorganic nature, such as light, heat, motion, magnetism, and chemical affinity, are in a state of mutual relation; so that under certain circumstances one of these forces is capable of producing or being converted into another. And Mr. Grove has further suggested that the principles and mode of reasoning on which his observations are founded may be applied to the organic as well as the inorganic world; and that muscular force, animal and vegetable heat, &c., may, and sometimes will, be shown to have similar definite correlations. Supposing these views to be correct, may it not be that the union of carbon with oxygen gas, which, under ordinary circumstances, is immediately followed by the evolution of heat, is in the living body productive of a different result (such as the maintenance of the nervous power, or the irritability of the muscles), and that it may be thus only indirectly concerned in the calorific function?"

Pursuing the idea here suggested, Mr. Lobb sketches, after Simon, the various chemical and molecular changes that are constantly going forward in the capillary circulation: these, he argues, necessitate the evolution or setting free of certain large currents of force, "cell electricity, or cell force, which correlate into animal heat, or nerve force, or are retained as an expansive force (a force which lies dormant between the particles of matter separating them from one another)." This "nerve force, or intelligence," into which the cell electricity, or cell force, has been changed, is taken up by the sympathetic nerves which everywhere accompany the arteries, and by them conveyed to the nearest ganglia,

"Where it is intensified and reflected in another direction; thus, if the tissue from whence the intelligence arrives requires more blood, the fluid is passed on to the branch of the artery supplying the part, and more blood is poured into it; if, on the contrary, the part is well nourished, less blood is sent there, but it is directed in a different direction; therefore, in a healthy condition of the part, that ganglion undertakes its whole supervision, and the fluid or intelligence is not passed on to any ganglion beyond, but is reflected to the portion of tissue under its immediate direction. The fluid

acts instantaneously; therefore, fluid collected at one portion of a capillary, may be referred to and from a centre to the next capillary, before the circulation has advanced so far, so that any repair required by the tissue, or any effete matter to be removed, is already understood by the blood-cells, which immediately proceed to effect the desired change."

The foundation of Mr. Lobb's pathology will be found in the following:—

"If the peripheral fluid be normal" (that is, the cell electricity or cell force), "the nervous fluid will be the same; but if not, then the ganglia have a resisting power, until they themselves, by malnutrition, yield and transmit abnormal fluid; if, therefore, a slight local disease occurs, it may not be transmitted, but may be cured locally; but if the general system is weak, the abnormal fluid transmitted to the centre is referred, and so complications innumerable arise."

The fluid is, he says, transmitted to the ganglia in intermittent currents; hence all tissues or organs controlled by the sympathetic have a rhythmic action. Rhythm he also, however, ascribes to the slow conducting powers of the sympathetic, this slowness arising from the "*numerous insulators—the ganglia.*" The peculiarity of the sensory powers, of which we have already spoken, are also ascribed to these insulators, the ganglia. The phenomena already described as having been observed by Bernard, on dividing the sympathetic, Mr. Lobb considers to be the result of the part having

"Its vitality *nearly* under its own control, it [the part] is not effected by what is going on elsewhere; it does not *know* that the stomach, the spleen, the liver, may want a larger supply of blood, therefore it takes all it can get for its own nutrition; more blood is attracted to the part, tissue change goes on rapidly, even stasis may take place, and suppuration be the result, the blood not knowing that it is required elsewhere, from the communication with the centres being cut off."

In the preface Mr. Lobb tells us that he is perfectly aware of the incompleteness of his views on the generation and distribution of nerve force, but that he offers them as the first fruits of his labours, hoping eventually, and by degrees, to collect a sufficient number of facts to enable him to perfect a theory on this abstruse subject; and he sums up, at the conclusion of this section by claiming that *he has led the way* to a new field of research.

"The generation by molecular change, the transmission to the

ganglion, the intensifying and reflection to the periphery and to other centres, of nerve force or fluid, or electricity, for the uses of the system, I have, to the best of my ability, endeavoured to explain; and though many errors may be discovered by my readers —I trust indulgent critics—still I venture to hope that I have led the way to a field of research hitherto lying fallow in the vast realms of physiology."

The sketch we have given of Mr. Lobb's views will sufficiently indicate the manner in which he has *followed the lead* of Sir Benjamin Brodie into the field of research laid open by the labours of Mr. Grove and Dr. Carpenter. Most of our readers will, we expect, agree with us, that, notwithstanding the assistance of his unacknowledged leader, he has not done much; and that a theory which requires to be expressed in such figurative language is not calculated to make much way in the vast realms of physiology. And yet, that the various chemical and molecular changes occurring in the capillaries may set free force which may be correlated into nerve force, as suggested by Sir B. Brodie, or in some other way stimulate the extremities of the nerves, and thus originate impulses which may be carried to the ganglia, and be thence reflected to the muscular coats of the arteries so as to regulate the quantity of blood sent to the tissues, is quite in accordance with all that we know in physiology. We would suggest to Mr. Lobb that if he applied the talents he seems to possess to the working out of this suggestion, instead of prostituting them to the production of such a work as the present, he might indeed " confer a boon on the great body of the profession,"—a real boon, instead of such a spurious affair as this.

Prostituting his talents, we have said, for the work is one of those pseudo-scientific books calculated for the public eye, written in accordance with popular language, and intended to enlighten the people as to the great skill peculiarly possessed by the author. The book commences at the very beginning of that interesting subject, the physiology of nutrition, with a disquisition on aliments; then we have a theory of the vibration of the ultimate atoms of matter, which is supplied by his friend Mr. Pollock, and which is, perhaps, very learned,—the best thing we can say for it is that it is short,—for even to our critical mind it is utterly incomprehensible. Then, having described the elementary proximate principles of food, our author traces them, step by step, through digestion, chylification, and absorption into the blood, and to the building up of the tissues; and again out of the system by the excretions. All is done in the popular style, and in every section errors, more or less im-

portant, are met with, and the details are so defective as to render the work one of no value to the well-informed practitioner.

We feel bound to give the following extract, for reasons that will appear on the face of it, and especially that the estimate Mr. Lobb has of his own abilities may be seen; the italics are ours.

"The chyle," he says, "is of the greatest importance, for on its normal elaboration depends the new blood which is to nourish and form the body. I shall boldly give my views concerning the formation of the chyle, for upon them is principally based the further reasoning on the physiology and pathology of the affections of which I treat; *and if what I bring forward is novel*, let the evidence of its truth be examined into before it is set aside. In these days of progress, a discovery or invention, however *contrary to received views it may be*, is still looked upon with respect until it is proved to be unworthy of acceptance. *We are not living in the days of Harvey, of Jenner, or of Hewson, those shining lights who dazzled our fellow mortals, from their great superiority to their contemporaries; but in days when hundreds of good men can examine into and are capable of forming a correct judgment of any discovery, be it mechanical, chemical, microscopical, or purely theoretical.* I trust, therefore, that I may not be judged by preconceived notions, but by the *correctness or incorrectness of the various steps of my reasoning, and the data on which they are based.* In a work of this description I am unable to give my *observations and experiments in their minutiæ*, although I trust some day to be allowed that opportunity, but merely their results."

The wonderful discovery made by this shining light, the equal of Harvey, &c., is that the chyle corpuscles are formed by the crystallization of phosphate of lime!

"Our microscopes are unable to show the earliest crystallization of the phosphate of lime, but with a powerful sixteenth by Powell I have seen them vibrating when they are too minute for measurement. Upon entering the lacteal, the phosphate of lime commences vibration; but being in a fluid that is denser than water —in fact, a solution of proteine and oil—each crystal becomes coated with a portion of these ingredients, vibration continuing; when many of these molecules are formed, they, upon approaching one another, become attached in a line, like a small string of beads, vibration still continuing; when a certain number are thus joined, they double one upon another, forming a nucleus, to which minute atoms are continually added, until a tolerable aggregation is the result; this is a mass of molecules."

The external atoms, still undergoing this mysterious vibration, next proceed to form the cell wall; but our readers have probably formed their own conclusions as to the whole affair.

The second part of the book opens with an imperfect account of the chemistry of the urine; then we have a still more imperfect account of various affections, accompanied by abnormal conditions of the urine. Thus a little more than half of the book is occupied: the greater part of the remainder is devoted to the consideration of the nervous affections accompanying spermatic discharges, with descriptions of the delights of love, and of the legitimate gratification of sexual instinct, and the terrible effects, *such as insanity, suicide, epilepsy, hysteria, chorea, and stammering, sure to follow on the abuse of the generative organs.* Mixed up with all this we have sneers at hospitals, at medical education, and at surgeons and physicians.

"To disarm criticism," he says, "I must here record that *I know*" (the italics are Mr. Lobb's) "many physicians and other members of the profession who do not acknowledge ulceration of the ejaculatory ducts, and degeneration of the prostate, amongst the affections to which man is heir; or, if they do, have not the slightest idea of how to treat them."

We need not say, after the foregoing, that we have cases detailed of successful cures effected where physicians and surgeons had failed; and also cautions given as to the necessity of having the treatment carried on under the immediate care of one who understands the subject. In truth we should not have deemed the work worthy of so extended a notice but for the too favourable reception it has met with from some of our weekly contemporaries.

III. Dr. Davey has himself suggested to us the word whereby we may best characterize his book, the third on our list. It is a most "inextricable" book, and as he has "found it impossible to follow Marshall Hall, so inextricable do his statements not unfrequently become," he will, it is hoped, sympathize with those who have frequently found it impossible to follow his own for the same reason. This "inextricability" arises from many causes,—the style is very obscure, it is diffuse, and there are frequently "inextricable" parentheses, and parentheses within parentheses; the matter is ill arranged, and there are many repetitions; but more "inextricable" still is the state of amazement into which we fall as we read, unless indeed we are prepared to ignore all that we have ever learned on the subject, or have lost the faculty of amazement. There are, we regret to say, other faults besides "inextricability;" but of these we shall speak further on.

The volume consists, first, of an introduction of thirty-six pages; then there is a chapter on the structure of the ganglionic system, of thirty pages; then we have 123 pages, forming chapter II. and its appendix, on the functions of the system; chapter III. and its appendix occupy some ninety pages more, with the consideration of the pathology of the system; and chapter IV., of twenty-seven pages, on the general treatment of disease, finishes the book.

In the introduction Dr. Davy states his belief that it is a matter of "logical demonstration," that vegetables possess a ganglionic nervous system. This demonstration is not very conclusive:—

"If the organic functions, as they obtain in the animal, are to be referred to the ganglionic nervous system; or, what is the same thing, to the irritability of which it is the immediate seat, it follows, admitting the existence or operation of the same organic functions in the vegetable kingdom, that plants are necessarily endowed with nerve structure, and that this constitutes the analogue of the ganglionic nervous system in man and the higher animals."

In the first chapter Dr. Davey announces that his object being to demonstrate the several functions of the ganglionic nervous system, his book is physiological rather than anatomical. However, he thought it necessary for the entirety of his subject, and the more easy comprehension of his views, to prefix some general remarks on the anatomy of the sympathetic nerve. He accordingly gives a rapid sketch of its descriptive anatomy, tracing it from its centre, the solar plexus, that he might not treat it with less respect than anatomists do the cerebro-spinal system. Then he considers its minute structure, adopting the descriptions of Bichat and Fletcher, which is rather strange, seeing that he had before intimated his unwillingness to believe "in these days of the microscope and electricity, in the nonsense which pleased our grandfathers;"—in a note, it is true, he shows that he is acquainted with some of the more recent observations on these matters, but they are evidently not to his mind.

The remainder of the chapter contains some really very amazing statements, such, for example, as, that every point of every nerve of the ganglionic system is to be regarded as a centre of nervous energy to itself. Or, again, that—

"So universally and so copiously is the ganglionic nervous tissue distributed, that, like the parenchymatous tissue, it is interwoven with every portion of the organism; and, more even than this, constitutes a great part of the volume and weight of the body."

The former statement is adopted from Fletcher, who did not observe the distinction between gray fibres and gray vesicular matter; but this one is supported, a little further on in the book, by another "logical demonstration." It appears Dr. Anderson describes the earliest traces of nervous tissue as being in the form of minute *globules*; and Dr. Carpenter describes the tissues as having their origin in a process of *cell* growth, —the cells of Carpenter are, then, globules—the nerve globules of Anderson, and hence the universal distribution of the ganglionic nervous system is apparent! Between this statement and its remarkable "confirmation" by Carpenter, we have it argued that the sympathetic system is the first that is met with in the lower animals, and, by a peculiar process of addition and subtraction, a passage from Solly is adduced as showing the tendency of all anatomists to take this view. It appears, moreover, that man and a monad have a common starting point,—a globule,—and this is either a nerve globule, or has nerve globules scattered through it: hence the ganglionic system is the first part formed in utero. The whole evidence is so complete, that Dr. Davey is obliged with regret to perceive that Dr. Carpenter is so inclined to discredit the existence of a nervous system in the lower classes of animals, fearing, as it would appear to Dr. Davey, "that its demonstration would endanger his *cell theory*." Hoping that Carpenter will overcome his prejudices and fears, we will leave Dr. Davey's anatomy for his physiology.

We have already seen that the ganglionic system of nerves is said by Dr. Davey to form, not only the great portion of the weight and volume of the body, but is the life of it, holding the same relation to the otherwise dull and inert frame as the fire to the statue of Prometheus. Consequently, it cannot excite surprise to be told, that the brain and spinal cord are subsidiary organs, and dependent not only for their existence and integrity, but for the performance of their functions, on the ganglionic system; and that the "irritability" observed by Le Gallois in an animal deprived of its brain and spinal cord, and that observed by Marshall Hall in one deprived of its brain, and, as he believed, but erroneously, according to Dr. Davey, the entire of the ganglionic system "was [*sic*] precisely of the same kind, though plainly much modified by the circumstances of vivisection in either case."

In explanation, apparently, of all this, we have Mr. Solly again adduced:—

"It must never be forgotten that each ganglion belonging to the organic nervous system is held to be independent of every other;

and, what is more, each nerve proceeding from a single ganglion is, in a great measure (writes Mr. Solly, on the authority of no less an individual than Cuvier himself) independent of that ganglion, and even that each point of such nerve is independent of all the rest, and constitutes *per se* a distinct focus of nervous influence."

Now it will be remembered that one of the distinguishing features in Mr. Solly's writings is the boldness with which he announced, before the doctrine was generally received, that the nervous fibres were exclusively devoted to the conduction of impulses to and from the corpuscular substance, and it must therefore excite surprise to find him brought forward as a witness to prove the contrary. At first we thought it was a mistake in the printing, and that some other author was meant; but reading on we met with still more startling examples of the dishonesty, we must call it, with which Dr. Davey makes quotations, and therefore we made a search in Solly's book, and found that the words do, it is true, occur; but it is in an account of the literary history of the sympathetic nerve, quoted by Mr. Solly from Dr. Fletcher's Lectures, in which they are given as expressing the views of Bichat, and not of Cuvier. It would, however, be quite as true to represent Solly as writing, on the authority of Galen, or Willis, or Lancisi, that the ganglia were to be regarded as "buttresses," or "diverticula," or "forcing pumps for the animal spirits," expressions occurring in the same passage, as to assert that he teaches, even on the authority of Bichat, that each part of the nerve constitutes, *per se*, a distinct focus of nervous influence," In further proof of this pre-eminence of the ganglionic nerves, reference is made to cases recorded where the fœtus has arrived at full development without having either brain or spinal cord, *because*, Dr. Davey says, they have ganglionic nerves. And the dependence of the cerebro-spinal centres on the ganglionic system for the power of performing their functions is said to be shown by certain experiments,—removing or injuring the ganglia; but as these are not detailed, and as the results stated do not agree with those obtained by Reid, Bernard, or Brown-Sequard, to which allusion has already been made, we cannot give in our adhesion to the conclusions of Dr. Davey, any more than we can accept the inferences he draws from the experiments of Sir B. Brodie, inferences of which "it does not anywhere appear that even Sir B. Brodie, or any one of the many commentators on his experiments, had any idea."

The development of the body, its nutrition and growth, the processes of respiration and circulation, secretion and ab-

sorption, having been proved, in the foregoing fashion, to depend on the ganglionic system, Dr. Davey next shows that these functions are not interrupted during sleep, because the ganglionic system never sleeps. Their continuance during sleep manifests, he says, their independence (respiration included) of the *cerebro-spinal* system, the action of the *spinal* as well as the cerebral system being, it is said, suspended in sleep. In evidence of this we have a long quotation from Dr. Von Feuchtensleben, proving the suspension of the *cerebral* functions, and ending, *according* to Dr. Davey, in the following conclusive manner:—"Sleep, in short, is an affection of the cerebro-spinal system: the ganglionic nervous system never sleeps." However, on turning to Feuchtensleben's book, we found all Dr. Davey's quotation, *except* this conclusive proof of his argument, which does not exist in the whole work. On the contrary, in the foot-note, Baron Feuchtensleben adopts Marshall Hall's statement, that "sleep is a cerebral affection; the *spinal and* ganglionic systems never sleep."

Animal heat is also said to be a function of the ganglionic nerves; because it does not depend on certain other stated causes it must, Dr. Davy argues, depend on these; and he says, if "the normal function of this (or these) same important centre (or centres) be interfered with, or interrupted in any way, the animal heat will directly fail," a conclusion not *just* confirmed by the experiments of Bernard, already mentioned.

Instinct, too, is said to be a function of this system; and among other proofs of this the case of the infant born without brain or spinal cord is referred to, where, he says, "it is a fact well insisted on, that instinctive movements exist, and are well and beautifully demonstrated." This is, however, an instance of shortness of memory, a thing that ought always to be avoided, for in a previous page the truth is admitted, that such infants die immediately on birth. It is not, we regret, an accidental slip of the memory, for the matter is returned to again, and we are told:—

"It should be remembered that not only are the first movements of the infant, i. e., in its normal state of being, of a purely automatic character, and analogous to the instinctive actions of the lowest animals, but that those also of the monster born without either brain or spinal cord, and with only ganglionic nerve matter, are of precisely the same kind."

It appears, too, that the writings of Dr. Carpenter confirm Dr. Davey's opinion as to instinct, though he himself, as it seems to us, thinks that they inculcate a very different view.

We must leave it to those who like the anatomy and physiology which we have, to the best of our power, sketched from this "inextricable" book, to disentangle the remaining chapters for themselves. We may remark, however, that Dr. Davey is an advocate of mesmerism and phrenology, sciences for the teaching of which his style of writing seems to be peculiarly adapted.

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*Observations on Venereal Diseases: derived from Civil and Military Practice.* By Hamilton Labatt, A.B.T.C.D., F.R.C.S.I., &c. &c. Dublin: Fannin and Co. 1858. 12mo, pp. 283.

Years have passed since the name of Labatt, so familiar to our readers, came before the profession in connexion with the history and phenomena of an animal virus, and its effects upon those systems which by absorption had been made subject to its influence. The present author appears to give us the results of his experience, also relative to the effects of the absorption of a virus upon the human body, but one whose baneful and destructive consequences, contrast most strongly with the benign and redeeming influence of that which formed the theme of his father, the late eminent Samuel Bell Labatt.

It seems that during the late war with Russia, the garrison of Dublin, the head-quarters of the central military district of Ireland, was, to a certain extent, reduced to the necessity which affects a detachment barrack in the wilds of Connaught, so far as regarded the necessity of employing a civil medical practitioner to take medical charge of some of the troops.

The author had the good fortune to obtain this charge, whether at the munificent (?) stipend allowed by the Government, or at a remuneration more in accordance with his position and standing, it does not transpire. However, having been relieved from the temporary charge of a depôt hospital, he was sent to do duty at the General Hospital, Phœnix Park, in which latter position he remained, so far as we can judge, at least a year.

The staple disease of a military hospital in a garrison town is venereal, both in the form of gonorrhœa and syphilis. During Dr. Labatt's short military experience, so many as 470 cases came under his notice, of which he has preserved statistical memoranda. Upon this as a foundation, in addition to his previous experience in civil practice, he builds his present volume. Now, although we cannot but admit that 470 cases

constitute a number too small, from which to arrive at any permanent conclusions, relative either to the peculiarities of the disease, or the most suitable treatment for each of its various phases, yet the opinions of the individual who has carefully attended to the histories and treatment of comparatively a few cases, are worthy of respect.

The administration of the affairs of the Army Medical Department, during the late war, received a just share of abuse, along with that of other departments of the public service, because of inefficiency. To that inefficiency, however, we are indebted for the volume before us. Some may entertain the opinion that it would have been better had this book not appeared, since, by calling to mind "bygones," it might have the effect, at this late period, of drawing the veil which should have ever remained closed, upon the past shortcomings of that lamentably parsimonious establishment which once had its unhealthy existence near St. James'. But though our gorge may be raised when these past imperfections are brought back to our memory, still we must feel pleasure at the contemplation, that amongst our Irish medical literature there now exists a manual on the venereal disease, which is justly entitled to be regarded as one admirably adapted for the student's use, containing, as it does, a careful epitome of all that is most important on that subject.

Dr. Labatt has proved himself fully conversant with the literature of the venereal; he has judiciously arranged the various opinions of the most eminent civil and military authorities, and upon each particular head he has modestly and sensibly given his own.

The volume comprises separate chapters upon each of the following subjects:—Primary and constitutional syphilis; syphilis in infants; gonorrhœa; and gonorrhœal ophthalmia. The descriptions of the various forms of ulcers are concise and clear; and, on the whole, his style may be well described by the term "readable."

With regard to Dr. Labatt's treatment of syphilis, it may be said that he is a mild mercurialist. The following quotations display his views on this matter in a general way. The author remarks:—

"Although it must be admitted we are yet far from fixed principles, nevertheless, there are facts which may be studied with the utmost advantage, as pointing out to us the necessity for rejecting uniformity of treatment in primary syphilis. It is granted by both sides that, after the mercurial as well as the non-mercurial plan, secondary symptoms have supervened. When a case of se-

condary syphilis is brought under the notice of the surgeon, he generally, for his own future guidance, ascertains, as far as possible, whether mercury has been used for the primary disorder or not. Let him look back on experience accumulated in this manner, and he will at once recollect to have witnessed most complicated cases of secondary symptoms, that have ensued on primary affections, treated some by mercury, and others by an opposite plan. I am free to grant that, on a careful analysis, we shall find the result in favour of mercury judiciously exhibited. Yet it is certain that, generally speaking, the secondary symptoms following the non-mercurial plan are of a more mitigated type than those resulting in cases where mercury has been used in the primary stages. Neither do we meet with affections of the third order of parts in the former so frequently as in the latter—facts to be explained either by the mode in which that agent has been administered, or by the particular cases to which it has been applied."

And again he observes:—

"Although it cannot be denied that certain forms of primary syphilis are curable without the aid of mercury, I am by no means prepared to accept with unqualified assent all that has been advanced in support of this view," &c.

With this short notice we conclude, by recommending this volume to the attention of all students of the disease, who cannot but benefit by its perusal. Before drawing to a close, however, we would beg to make one or two remarks on a subject which we consider one of importance, and we are sure that, had the author viewed it in a similar light with us, he would have spared us the pain of finding fault. Dr. Labatt has presented us, at page 11, with a short abstract of a few cases of secondary syphilis (a form well known to be more rare in army than in civil practice, and for obvious reasons); and in this list, we find the names of certain soldiers of certain gallant corps *printed in full.* We would have preferred *initials only;* and the numbers of the regiments were quite unnecessary for the author's purpose. To be sure, it may be said in extenuation, that since the names have been written in full upon the pages of the hospital register, there could be no harm in printing them in a book. But it must be remembered that an hospital register, and sick returns, are private to a certain extent, closed as they are from the *general* gaze. Let our readers conceive what would be the feelings of colour-sergeant ———, should he see himself *before the public in undress;* as having, upon a stated day of a stated month, in a stated year, been discharged from hospital, after "extensive scaly eruption occupying trunk and extremities; spots arranged in blotches

with scaly white appearance;" and as having, "three months" prior to his admission, "had a sore on his prepuce which healed under the use of mercury." Surely, it is by no means extravagant to suppose that the colour-sergeant may get a peep at "Labatt" from the hospital sergeant; or the latter having by chance found the volume in the surgery, and seen the literary distinction granted to his friend, may either in friendship acquaint him, or twit him upon it at the sergeants' mess. Aye, and not improbable, now-a-days, having been raised from the ranks, the quondam non-commissioned officer may be reminded of his former peccadilloes by a casual perusal of our author—for officers are curious on these matters—whilst tossing over the scanty library of his friend, the regimental surgeon. Seven privates are rendered similarly immortal, one of whom, however, having, as we are informed, been discharged the service on account of the supervention of phthisis, is, doubtless, ere this, past either seeing or hearing.

We regret having to draw attention to this subject, but the omission of the names would, we feel sure our readers will agree with us, have been a desideratum.

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*A Manual of Psychological Medicine: containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity.* With an Appendix of Cases. By John Charles Bucknill, M. D., London, Licentiate of the Royal College of Physicians; Fellow of University College, London; Fellow of the Medico-Chirurgical Society; Medical Superintendent of the Devon County Lunatic Asylum; and Editor of the Asylum Journal of Mental Science. And by Daniel H. Tuke, M. D., Licentiate of the Royal College of Physicians, London; Lecturer on Psychological Medicine in the York School of Medicine; and Visiting Medical Officer to the York Retreat. London: Churchill. 1858. 8vo, pp. 562.

It has been repeated again and again by some persons, that books generally are multiplying of late years in a most unprecedented manner on the world; and there are those who declare that in the "deluge" of them, the greater number of readers must be content with little more than glancing over the title-pages. It is thought by not a few that this idea may be applied in a moderate degree even to medical books. Still, there are men who manage to "read;" and, as we have just remarked, not a small number who manage to write, which is

certainly a more laborious matter, where various authors have to be referred to, consulted, compared together, and extracted from.

We have now before us a work on Insanity, termed "A MANUAL," and we must own not unwieldy; but which we may, nevertheless, call elaborate, as being very tolerably full in every department: and those departments are numerous, as may be supposed from the title at large (given at the heading of this article), but will be clearly perceived as we proceed in our review. The warranty of the authors for undertaking such a work is, in some measure, expressed by what is appended to their respective names on the titlepage.

We confess we are gratified to find psychological medicine at length attaining that general attention which was so little accorded to it through a very considerable period. We may say, that until within the present century, the investigations connected with this branch of medicine were comparatively feeble; and several of the deductions made we conceive to have been calculated to challenge doubt, if not to call for absolute rejection. But within the time alluded to, a very animated impetus was given to the consideration of the whole subject, in its various ramifications; and experienced men and learned authors are now yearly (we had almost said *daily*) coming forward with histories, facts, and theories, well deserving of attention, and examination, though not altogether deserving, we presume, of unqualified acceptance. Many of the works we are now alluding to are both valuable and interesting, aiding, in one way or another, the cause of science, and the amelioration of our common humanity. We could name several works, and their authors, whose merits we gladly own; and to certain of these authors has been conceded the praise which was fairly their due. Dr. Prichard's "Treatise on Insanity," amongst others, will probably never cease to be a volume in almost every reading physician's library; but we have no hesitation in saying that the work we are at present reviewing appears to us much more suitable than Dr. Prichard's for medical students, for medical men generally, and finally, for scientific and philosophical men not of the medical profession.

The authors very properly and very correctly state that—

"A knowledge of the nature and treatment of insanity is now expected of every well-educated medical man. The India Board require it of all persons to whom medical appointments are given under their new system of competitive examination. It is reasonable, therefore, to expect that the good example thus set will be followed in other quarters; and a desire to attain a competent know-

ledge of this important branch of medical practice has become far more general in the profession than it ever before has been."

Before we proceed further, it may be well to apprize our readers that the chapters on the history, nosology, description, and statistics—namely, that portion of the work from the commencement to page 268—are written by Dr. Tuke; and that the chapters on the diagnosis, pathology, and treatment of insanity, and the Appendix of Cases, &c. (i. e. from page 268 to the end of the work), are written by Dr. Bucknill. A good general idea of the work may be given by simply noting *seriatim* the headings of the chapters. These chapters are ten in number, viz.—Chap. I. Historical sketch of insanity among the nations of antiquity, mainly in regard to its extent.—Chap. II. Opinions of ancient medical writers on the treatment of the insane.—Chap. III. Modern civilization in its bearing upon insanity.—Chap. IV. Amelioration of the condition of the insane in modern times, especially in regard to mechanical restraints.—Chap. V. Of the definition of insanity, and of classification.—Chap. VI. Of the various forms of mental disease.—Chap. VII. The statistics of insanity.—Chap. VIII. Diagnosis of insanity.—Chap. IX. Pathology of insanity.—Chap X. Treatment of insanity.

The Appendix to the volume contains :—First. A selection of cases, which are illustrated by the portraits in the frontispiece. These cases are seven in number : acute mania, monomania of pride, congenital imbecility, general paralysis, acute suicidal melancholia, primary dementia, secondary dementia.—Second. Some cases illustrated by treatment.—Third. Some cases illustrating causation and pathology. The index to the volume, being pretty full, greatly facilitates reference to any particular point.

The details of the way in which the insane were formerly used in asylums *generally* would be most harrowing to the feelings, as the management and usage were, in truth, a monstrous outrage on humanity, on science, and on common sense. We rejoice in the remarkable changes which have taken place. "Among the bad asylums (observes Dr. Conolly) the York Lunatic Asylum was the worst." This institution was founded by general subscription in 1777, and had for its object the decent maintenance and relief of such insane persons as were in low circumstances. Up to the year 1791 no suspicion in regard to the comfort of the patients was felt. In this year, however, some members of the Society of Friends sent one of their family (a lady) for care to the Asylum. The rules of the

Asylum forbade her friends to see her: she died; something wrong was suspected; and from that day the Society of Friends determined to establish an institution in which there should be no secrecy. William Tuke was the great founder of the new asylum; and from the first, he and his friends pursued, in their institution, those principles which are now universally acknowledged. By a singular and interesting coincidence (writes Dr. Thurnam), it was in the spring of 1792,—the very year in which the celebrated Pinel commenced the amelioration of the treatment of the insane in France, by the truly courageous act of unchaining fifty supposed incurable and dangerous lunatics at the Bicêtre,—that the establishment of the "Retreat" at York was proposed by the late William Tuke :—

"Each (as is observed in the American Journal of Insanity)—*each* perceived the wretchedness, the misery, the suffering of the insane around him; each was moved to compassion; each resolved to effect a reform in the treatment; each succeeded. This recognition of services to humanity is due to each. To *each*, therefore, (to Pinel and to William Tuke, respectively) we freely accord it."

But, what is insanity?—or, what brief definition will modern psychologists offer intelligent inquirers? for it must be observed, that the definition of Locke, or of Cullen, as of many others, has failed to be fully satisfactory. The former says:—"Madmen do not appear to have lost the faculty of reasoning, but having joined together some ideas very strongly, they mistake them for truths, and err as men do who argue from wrong principles." Cullen defines madness to be—"a lesion of the intellectual faculties, without pyrexia, and without coma."

Passing by the definitions of Spurzheim, Guislain, Morel, Lélut, and others, we may note the definitions of one or two modern authors better known to many. Dr. Combe remarks:—"A prolonged departure, and without an adequate external cause, from the state of feeling and modes of thinking, usual to the individual who is in health, is the true feature of disorder of the mind." But he finds it necessary to add that insanity is—"a morbid action in one, in several, or in the whole of the cerebral organs; and, as its necessary consequence, functional derangement in one, in several, or in the whole of the mental faculties which these organs subserve." Dr. Conolly is as well aware as any man of the difficulties which attach to any attempt at a complete definition, but submits one which embraces much, but by no means all, that might be deemed necessary:—"An impairment of one or more of the faculties of

the mind, accompanied with, or inducing, a defect in the comparing faculty." Dr. Bucknill regards insanity as—

"A condition of the mind, in which a false action of conception or judgment, a defective power of the will, or an uncontrollable violence of the emotions and instincts, have separately or conjointly been produced by disease."

The illustrious dramatist, whose knowledge and observation so continually astonish us, has numerous allusions to madness in his writings, and he seems to be well aware of the difficulty of a proper definition. In Act II., Scene ii., of the tragedy of Hamlet, Polonius is made to say—

"Your noble son is mad:
Mad, call I it; for to define true madness,
What is't but to be nothing else but mad?"

Attempts at defining insanity will, however, still be made by medical men, and by philosophic minds; but, as the authors of the "Manual" well remark—

"It is not in any definition of mental derangement that the student will learn what insanity really is."

He must both read descriptions of the disorder in suitable books, and obtain actual observation of the insane. Two observations of the authors we deem it by no means unimportant to note, in connexion with recognising the disease, which generally is palpable enough, whatever difficulty may occasionally, or very rarely, occur as to a positive decision. They prove the matter very plainly by analogy:—

"Thus, while definitions of anger would differ with every definer, all would agree that anger is anger, when exhibited before them."

Again, they say:—

"Cases of insanity certainly exist, in which doubt as to their real nature will be experienced by the student; but the existence of these, such as graduate between reason and mental disease, is, as Sir Henry Holland observes, but a part of that law of continuity which pervades so generally every part of creation."

We have given the heads of the chapters; and from each of these chapters we could give many striking and important extracts; but this we must forego at present. An idea of how much each chapter embraces may be formed from a specimen of the

contents of a single chapter, the chapter termed—"Definition of Insanity, and of Classification." Contents, viz.:—

"1. *Definition of Insanity.*—Difficulties of attempting it; Illustrations; Locke's Definition; Cullen; Dr. Combe; Spurzheim; Lélut; Dr. Conolly; Dr. Guislain; M. Morel; Essentials of a Definition of Insanity; Concluding remarks on the subject.

"2. *On Classification.*—Various Classifications from the earliest period of the cultivation of Medicine; Hippocrates; Celsus; Cicero's Strictures; Roman Law; Aretæus; Cælius Aurelianus; Galen.

"Modern Nosology.—Sauvages; Vogel; Linnæus; Cullen; Arnold; Mason Good; Pinel; Esquirol; Guislain; Conolly; Parchappe; Baillarger; Prichard; Bucknill; Noble; Munro.

"Remarks on Classification.—Arrangement adopted in this work."

We may have given a very imperfect idea of the book; but we cannot at present review it more fully. We are quite free to boldly state, however, that we know of no one book which so fully embraces everything connected with the insane; and we deem the "Historical Sketch of Insanity among the nations of antiquity," and we may say, down to the present time, as instructive as it is interesting, and more fully handled than we have yet seen it. Altogether we can confidently recommend the work to our readers: we believe they will find it one which deserves to be valued even beyond any praise which we have deemed it our duty to accord to a volume of both great medical and great moral merit.

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*Notes on the Surgery of the War in the Crimea, with Remarks on the Treatment of Gunshot Wounds.* By George H. B. Macleod, M. D., F.R.C.S., &c. &c. London: Churchill, 1858. 8vo, pp. 439.

The opportunities which Dr. Macleod enjoyed whilst serving as a medical officer attached to the British army at Smyrna, Constantinople, Scutari, and in the Crimea, he has turned to good account, having embodied his observations not only in a readable, but in a really useful book, for such is the work before us. "A great war," our author commences by saying in his preface, "is a great epoch in the onward march of surgical science, when the slowly elaborated teachings of civil life are tested on a grand scale in the presence of representatives from every school. Unfortunately, however, the vicissitudes, hardships, and uncertainties of a campaign, present difficulties of

no small moment to the collection and arrangement of observations;" and "the shortness and abrupt termination of this war were unquestionably a great loss to the advancement of surgery, however great was the gain otherwise to humanity." The difficulties to be anticipated by a State long at peace, and whose military organization had consequently become defective, had but been overcome; and "just when in a position to investigate many questions with precision and advantage, the opportunity passed away."

The Crimean war, however, had, for England, this great advantage, viz., that it proved to demonstration the evils of inefficient military organization, and the utter necessity which exists for paying strict attention to all those considerations which the purely military authorities had come to consider as only of secondary moment; and Dr. Macleod has embodied with his "Notes on the Surgery of the War" some very valuable remarks on points of even more value than the treatment of injury, for he has embraced in his volume those subjects which, rightly attended to, will save life on a large scale, by the prevention of disease. The contents of the volume before us are divided into twelve chapters, and, of these, three are devoted to matters of camp-life, and campaigning, and war in general.

The first chapter includes "the history and physical characters of the Crimea; its climate and geology; the changes of the seasons during the occupation of the Allies; the steppe lands of the interior; vegetation and resources of the country; the natives and their diseases."

The second chapter comprises the consideration of the "drainage of the camp, water supply; latrines; food; cooking; fuel; clothing; housing and duty;" with the effects of all these combined on the health and diseases of the soldiers. Next the arrangements for the treatment of the sick and wounded, viz.:—Hospitals; the distribution of the sick; nursing, male and female; transport.

The third chapter carries the reader back to "the campaign in Bulgaria, and its effects on the subsequent health of the troops; the diseases which appeared there, subsequently, during the flank march, as well as afterwards in the camp before Sebastopol."

We shall first direct attention to the second of these chapters—that on camp management. It opens with a brief description of the site or ground occupied by the British army, and then enters at once into the consideration of practical points in connexion with the subjects before enumerated. In

reference to the formation of latrines (the curse and pest of a camp if badly placed and constructed), Dr. Macleod observes:—"The unanticipated sojourn of the troops on the ground prevented that care being at first taken in the arrangement of the latrines and slaughter-houses, which is so desirable, and which was afterwards so abundantly shown. Those who visited the encampments of the Russians on the Mackenzie Heights after peace, will easily be able to understand what a miserable condition cantonments may be reduced to by the neglect of the necessary precautions on this head. So to allocate sites for these purposes as that they may be accessible to the camp, and at the same time sufficiently removed to prevent their contaminating the air, and that the locality they occupy shall not be required at any future period for the location of troops, calls for considerable forethought and arrangement." "And in connexion with the latrines," our author goes on to say, "there was yet another point in the hygiene of the camp which did not at first obtain sufficient attention: I refer to the burying of dead carcases."

The influence of the stench from these two causes—ill-placed and ill-contrived latrines, and putrid decomposing bodies—is most prejudicial to the health of any body of men, but particularly so to those who are subjected at the same time to other depressing agencies, such as over-work, bad food, and insufficient clothing, which have been the accompaniments of past, and may be those of any future campaign. We therefore think it most desirable for the welfare of troops that the suggestion of Mr. Ranald Martin should be in every instance acted upon, viz., of having attached to the person of the General in command an efficient medical officer as "officer of health," who should be so far in the confidence of the head of the military command as to receive from him his views in relation to the strategical position of every spot selected for encamping ground—that is to say, a general idea of what his steps would be if forced by the enemy to entrench, and hold it for any lengthened time. Proper precautions would then be adopted in every instance, and a system of the most perfect kind would soon be established in our army in reference to points which hitherto have not received attention until they have forced themselves upon the notice of those in power.

The remarks of Dr. Macleod upon the food, fuel, clothing, &c., are equally to the point, but add only further and too sad confirmation to all that has been said and written upon the miseries of the Crimea. Those days are gone, but let them not be forgotten, and, before passing on to other portions of the

work, we would beg our readers' attention to the summary here given, recollecting that nought but carelessness and want of providence on the part of the English nation reduced its army to the condition here presented:—

"From all that has been said, then, on the housing, clothing, food, and fuel provided for the soldiers, and the killing toil exacted from them durfng that period of the war which had most influence on their health and after history, the sad picture may be formed of their condition in the Crimea. Day after day passed in severe bodily exertion and anxious watching—one moment digging laboriously in extending the approaches, and the next with arms in hand repelling the assaulting enemy; almost always wet; exposed without cover to the drenching rain and soaking snow, the keen frost and biting wind; standing for days in wet mud; constantly either unnaturally excited or depressed; ever in danger, and without hope of a change; their dirty humid clothes in rags, their bodies covered with loathsome vermin which seemed to grow out of their very flesh; no comforts in their wind-pierced tents on the bleak plateau; no fires, unless, weary and foot-sore as they were, they dug beneath the snow-covered sod for wet roots wherewith to kindle a feeble and tantalizing blaze; without food till, after hours of persevering exertion, they managed to half cook their unpalatable ration over their winking fire; huddled into a crowded tent to pass the night in a close noisome atmosphere, on the oozy ground, covered by the same blanket which protected them in the wet and muddy trenches; longing for the morning, though its early dawn was signalled by the bugle sound which called them to a renewal of that dread task whose severity made them yet again sigh, 'would to God it were night!' This sketch is no exaggeration. It is true, though difficult to be realized even now by those who themselves saw it. Can we, then, find anywhere else in reality—nay, can we by the utmost stretch of imagination conceive—a more fruitful field for the seeds of disease, or the harvest of death, than is here presented to us in the camp of the weary, anxious-minded soldiers who fought so gallantly, endured so constantly, or died so nobly, and who now consecrate by their humble graves the green hill sides and lonely valleys of the Crimea?"

With reference to Hospitals and the treatment of the sick and wounded in war, the remarks of Dr. Macleod, in relation to the English system of having regimental establishments for the men of each corps under their own medical officers are judicious and correct, he says:—

"According to this plan, the soldiers are kept, when sick, in hospitals which belong to their regiments, in place of being transferred to general hospitals established to receive the common sick of the army. The discussion is an old one as to whether the system

which has been always followed by us, except in times of great necessity, or that of general hospitals, the plan adopted by the French and other continental nations during war, is the best. I do not intend here to review the question, but would merely remark that, after fairly weighing the subject, I think the regimental hospital arrangement presents the greatest advantages. One strong claim on our support is, that the surgeon of the corps must be greatly better acquainted with his men, their character and habits, and thus be more able to treat them, as well as more able to detect imposture if attempted, than the medical attendant who probably never saw them till they present themselves to him as patients. The men are by this system also kept among their comrades—no small advantage to them—and thus their minds are cheered by the companionship of friends. More time and attendance, too, can be bestowed on the sick in these small hospitals, from the proportion of medical attendants and orderlies being in general much above what it is in the larger establishments, and from the responsibility being, if possible, more binding on the regimental surgeon, and the stock of comforts proportionally greater and more regularly supplied, from the resources of the whole regiment being at his command. In regimental hospitals it is well known that wounds heal more satisfactorily, and that purulent infection and gangrene occur more rarely, most probably because, from the mixture of cases which takes place in them, that segregation of suppurating wounds which is so apt to occur in general hospitals is avoided.

"On the other hand, a much larger staff is required when the hospitals are confined to regiments. A regiment numbering one thousand men on active service has a surgeon and three assistants attached to it, all of whom are rendered useless if their corps is not engaged, while a superabundance of work falls to the lot of those medical officers whose regiments have suffered severely in action. Hence it follows, that if the whole medical staff of the army was united and concentrated in general hospitals, less than one-half of the aggregate number of professional men would suffice for the service. In the French army, the proportion of medical officers to the strength is not a third so large as in ours.

"Besides, a more uniform system can be followed in the treatment of the cases, and the results of such treatment made more available both for instructing the younger surgeons, and also for the promotion of science, when conducted in large hospitals, than it can ever be in small detached establishments. The cost of administration also will be greatly diminished by concentration, and the whole economy of the army, as regards the management and transport of the sick, easier arranged and much more efficiently conducted. But with all this—and it is a very great deal—to be said in favour of large hospitals, yet I unhesitatingly think that, tried by the one great test of the saving and prolongation of life, which in our army at least is the chief criterion of advantage, the regimental hospital system is the best."

And, as if to contrast the practical working of the two systems of immediate attendance in the hospital of his corps, or removal and deferred attendance in the reserve hospitals in the rear, the author gives an outline of the condition of an individual wounded, early and late, in the campaign, thus:—

"At two epochs of the siege, arrangements totally different were, from necessity, followed in the treatment and distribution of the sick and wounded. It can easily be understood what a difference such arrangements must have made in the mortality, after the receipt of such an injury as a compound fracture. How different it was to keep a patient so circumstanced in a comfortable hospital in camp, and treat him among his comrades, from having him transferred, immediately after the accident, in a jolting carriage over roads full of mud-pits, and in the close hold of a crowded transport over a sea proverbially stormy, to be disembarked, in a manner the most faulty conceivable, at Scutari, admitted among strangers into a great hospital at a period when the fever occasioned by his wound was at its height, and placed under the care of a surgeon who knew nothing of his previous history, or the particulars of his case."

The system of nursing for an army in time of war next engages his attention, and, respecting the employment of females, he states what any man of experience would countersign:—

"I have no hesitation in giving my adhesion to the practicability and usefulness of this proposal, if conducted with discretion and caution. The great difficulty will always be to find persons fitted to undertake the duty. They must combine a vigorous body with a well balanced mind,—a mind untinctured by vain romance, but endowed with religious feelings of such depth as will enable them to undertake their trying duties. There must be the most perfect subjection to superiors,—no fussiness or nervousness of disposition,—calmness in danger, and, above all, a large stock both of common sense and of cheerfulness. That most injudicious selections were, in various instances, made for service in our hospitals, few, who had much to do with these establishments, will deny; but every unprejudiced and attentive observer must acknowledge the vast amount of good which the female nurses accomplished, and the service which they were capable of performing when judiciously selected and properly organized." . . . "In military, more than in civil hospitals, are the kindly sympathy and gentle care of a woman required. The soldier has no crowd of anxious friends or relatives to visit his sick bed; but, oppressed by a sense of loneliness in a foreign land, a feeling of which he is little conscious when in health, he clings to those gentle offices of kindness which a woman can alone bestow. In the camp hospitals, with an army in the field, men alone should be employed as nurses; but, in the more fixed hospitals in the rere,

lady superintendents and under-nurses should, in my opinion, always be added to the regular staff."

To the views here expressed by Dr. Macleod we fully give our assent, provided lady superintendents and under-nurses, such as are specified by him, can be procured. The experiment, certainly, under Miss Nightingale succeeded well at Scutari, and should be tried again on the plan then carried out, and here set forth by the author, and their duties confined as follows:—

"Their attention should be limited to the bad cases. There should be a lady superintendent over each division of the hospital, responsible to the surgeon as well as to her own lady chief. There should be a store of extras under her charge, distributable on requisition from the medical attendant, and which depôt should be filled up to a certain quantity weekly, the 'sister' being held accountable for the contents. Wine and all extras should pass through her hands, and the management of the extra kitchen should be under her sole control."

Physic in the form of tonics during a lingering convalescence may be very desirable and very well in its way, but, as compared with nourishment (properly prepared), it is trash. At Scutari, prior to the placing of the kitchen department under female superintendence, "men turned away with loathing from the coarse, half-cooked, tough morsel" given to them, but rejected and left untouched. No sooner, however, was food suitable for the sick man's stomach and condition nicely prepared and served to him, than the "treatment," which before was futile, shortly told, and it was here that "the female nursing saved so many lives."

Passing from these most interesting and important subjects, we come to the surgical portion of the work. It treats, firstly, of the peculiarities of gunshot wounds in their various forms, with their complications and their general treatment, including primary and secondary hemorrhage, tetanus and gangrene, with erysipelas and frost-bite. The special injuries of warfare are then considered under their respective localities, as of the head, face, and chest; abdomen and bladder; fractures of the extremities, and wounds of joints; amputation of the one and excision of the other are well touched upon; and the use of chloroform in war fully considered. An appendix is added, which, under nine divisions, embraces many subjects of interest connected with the Crimean war. The first portion is devoted to the "Geology of the Crimea;" the next, to "thermometric observations;" the third, to the "weight and nutritive value

of the soldiers' rations." Then follow two chapters illustrating the military duty performed in the Crimea, and the "routine of duty in particular regiments." Next, "a table of weight of balls used by the belligerents;" then tables "showing the mortality following the greater amputations for gunshot wounds and accidents;" concluding with two interesting *resumés*,—the one of M. Scrive's work on "The Losses of the French in the Crimea;" and the other of the "Report of the British Government on the Surgery of the War in the Crimea."

Before entering upon the consideration of the injuries received by gunshot missiles, Dr. Macleod makes some pertinent observations upon their action and effects, especially in reference to the increased destructive properties of the conical over the old spherical bullet. Speaking of the "splitting of balls on the edge of bone, as, for instance, the edge of the tibia, or on the bridge of the nose, or on the humerus," he says, "there were fewer illustrations during the late war than usually occur during a campaign, from the comparatively little employment of the round ball. I do not believe that the conical ball, with its immense force of propulsion, could be so split."

The view here taken by the author, as to the reason of the splitting of the round ball, and the non-splitting of the conical, is not, we believe, the correct one. It is not in the force of propulsion, but in the composition of the bullet itself; the conical bullet being struck out of cold compressed lead, whilst the round ball is cast liquid, and crystallizes in cooling, and it is from the crystallization that this disposition to split into two divisions arises. Why the conical ball occasionally splits on the head is easily accounted for. It does so when striking obliquely, or in that direction that the outer table of the skull is entered at a very acute angle, and it is on the sharp cutting edge thus formed that the bullet is either sliced through, or, as we have seen in other cases, partially divided, one portion entering the cranium, and the other lying on the bone outside.

The surgical treatment of the principal injuries of war has by Dr. Macleod been carefully dwelt upon, and the views entertained by him upon them fairly and decidedly given. As an illustration, we may adduce our author's expression of opinion upon the treatment of secondary hemorrhage consequent upon a gunshot injury. He says:—

"In all such cases the second bleeding should determine active interference. I say the second bleeding, as it very often happens, that when hemorrhage has taken place once, even to a considerable

extent, and evidently from a vessel of large caliber, it never recurs. Many most striking instances of this have come under my notice. But though more than even this is true, and that frequently blood thrown out repeatedly is spontaneously arrested, still the great preponderance of cases in which it recurs in dangerous repetitions and quantities, as in the above instance, should cause us, I believe, to interfere on its second appearance, more particularly if the bleeding be in any quantity. Not to interfere unless the vessel is bleeding, must not always be understood too literally, or we will often be prevented from performing the operation till our patient is beyond our help. The hemorrhage recurs over and over again, and the surgeon, though as near as is practicable, arrives only in time to see the bed drenched, and the patient and attendant intensely alarmed. There is at the moment no bleeding, and he vainly hopes there will be no return; and so on goes the game between ebbing life and menacing death, the loss not great at each time, but mighty in its sum, till all assistance is useless. Many a valuable life has thus been lost which might have been saved by a more decided course of action.

"Few cases are more embarrassing than these to the surgeon, or require more determination, and well-considered resolution to conduct to a successful issue. One is averse to act when the immediate necessity has passed; and unless we be guided in our course by a knowledge of general results, more than by the immediate case in hand, we will lose many a patient. These cases form an exception to the rational surgery of the day, which prescribes inaction, unless there be immediate call for interference."

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*The Physician for All: his Philosophy, his Experience, and his Mission.* By John Spurgin, M.D., F.R.C.P., &c. Second Curriculum. London: Hodgson. 1857. 8vo, pp. 229.

The present work is a continuation of an essay from the pen of the same author, a review of which will be found in our twentieth volume. In noticing that treatise, we entered at some length into the general views therein advanced upon the comprehensive subject of the constitution of the blood. In this second curriculum we find the author resuming the same theme, which he does with a view, as indicated towards the conclusion of his former work, of—

"Gradually introducing the interesting subject of the blood's *determination*, embracing, as it does, the organization to which it is determined for general and specific uses."

Ever keeping in view the "five points of all medical consideration," to wit, the nature, constitution, determination, con-

tinuity, and quantity of the blood, upon which the welfare of the body depends, the author commences this essay with the subject of tubercular degeneration, and proceeds at once to open the question in all its bearings, laying, however, particular stress upon what is of paramount value to the popular reader, to whom in a great measure the book appears to be addressed, namely, the social, educational, and even national precautions which should be observed in order to diminish, as far as man can diminish, the development and spread of this perverted constitution of the blood. The considerations thence arising occupy a primary and prominent place in the essay before us. The practical application of such measures as experience has shown to afford the most rational basis of treatment in combating, at least for a time, many of the early threatenings of tubercular development, is illustrated by some well-chosen cases. Lest, however, the perusal of these cases and the accompanying remarks should lead the reader astray as to the positive curability of consumption, a matter which is apt to be greedily caught hold of by those who would fain wish to construe a mitigation of symptoms into a complete removal of their causes, and interpret a prolongation of life under comparatively favourable circumstances as securing an utter eradication of an organic mischief, the author endeavours to remove all doubt in the following plain terms:—

"To work upon the curability of consumption is to prey upon the pardonable credulity of the hopeful at the cost of honesty and fair dealing. Such workers must be content to take a discreditable stamp, and to be repudiated by the faculty who do not profess to reorganize a disorganized portion of the lungs. Hair, nails, skin, are reproduced; blood-vessels, &c., may grow in the way of extension from their sound correlatives; but degenerating structures, such as tuberculated lungs, can never be restored—they may be separated from sounder parts, and adhesions, cicatrices, or scars, may be exhibited. This happy event, however, by no means sanctions any party in his professing to cure consumption. No one, indeed, can be honest who holds to such profession in order to win practice."

We cannot but think that the author speaks rather confidently of the beneficial effects of early blood-letting in the hemoptysis of phthisical patients, and that, in reference to the neglect of this and some other measures of prevention, the following conclusion is of somewhat too general a character:—

"It is not wonderful, therefore," he says, "that insanity in divers forms, and diseases of the heart and of the bronchial tubes (bronchitis), and of the kidneys, of the liver and skin, should so

abound, nor that sudden death should be a frequent visitation;—still less, that uterine maladies and their concomitants should be so rife, to burden the shelves of our medical libraries with endless treatises on endless varieties of these secondary complaints, and to render a female and a delicacy of constitution almost synonymous terms," &c.

His general remarks, however, on the broad principles of treatment, especially as regards what may be considered as hygienic measures, are on the whole highly judicious, while he points out very clearly the relation and the connexion which subsist among a variety of derangements of the system, giving rise to innumerable complaints of local habitation, but proceeding from a disordered constitution of the blood. He animadverts very strongly upon the quackery of setting about to *cure* all these so-called diseases without reference to enlarged views or principles of treatment, and without recognising the necessity of directing primary attention to the constitutional disorder whence proceed most of these symptoms. But not only is quackery assailed, but "pure" surgery is allowed to come in for its share of obloquy, at least it would almost appear from the following extracts that the author includes it in the same category with ignorant and reckless empiricism. We should have thought, for instance, that the danger of suddenly checking a long-established drain, even by means of the most dexterous surgical procedure, was a matter which was pretty generally recognised, and yet we find that much ignorance is reported to be afloat regarding the precautions to be observed in such cases. The subject is thus introduced:—

"If, as the surgeon, he can also act the part of the physician, he is a valuable member of society, and highly deserving of honour and confidence as the general practitioner. *Not unfrequently*, however, has a 'Physician for All' witnessed the evils of the separation of the above qualifications in practice."

Reference is then made to a case in point, recorded in the first Curriculum; to which is appended, by way of further illustration, a case of long-continued hemorrhoidal discharge; a ligature was applied successfully; the patient received no instructions about an altered management of himself under the altered circumstances of his constitution; cerebral lesion supervened, and for thirteen years afterwards the patient was hemiplegic. We quite agree with the writer that, had this man's constitution been duly considered, he might have been spared the blighting consequences of the want of skilful precaution on the part of the operator, but we do not altogether like the way in which these and similar cases are made, in his subsequent

reflections, the ground of an unsparing application of epithets which, to say the least, have the appearance of unnecessary illiberality; for example, in such phrases as these :—

"The officious meddling of unaided surgery;"—"*surgical* conduct that has no regard to *medical* caution." And again: "The results of the operations of surgery may teem with satisfaction for the month, even as expediency may be popular for a parliamentary session, but they will often bring irreparable mischief upon a constitution that, of the physician's skill, would have gathered health from among the weeds of disordering insemination."

A few pages further on, and the tonsil-cutters are favoured by the author with "a bit of his mind;" the passage, however, is too long for extraction, and such of our friends, therefore, as may still be partial to these excisions are referred to the work, page 41. The next kind of practice which comes in for a few hard knocks is specialism. For example, in speaking of the application of tests, caloric and litmus paper, he says:—

"My experience has given me to know that the specialists, who are always at work with them" (i. e. tests, &c.) "are very indifferent physicians, for they look at disease in the reverse and not in the direct way. Whereas they should know a disorder before they prescribe for it, especially as patients do not often have an evacuation of any sort to exhibit for their guidance at the outset of the treatment [?]; and besides, judging from their writings, specialists are perpetually shifting from one kind of treatment to another, and the latest author superseding that of his predecessor, to say nothing of each specialist having his special treatment to compete with that of all others of his class."

Again:—

"In a few words it may be remarked that a disordered condition of the blood is seldom taken in hand for correction in time to prevent its precipitation upon some one organ or other, to its peril, and even to its destruction. For pathology to occupy its right position, the constitution of the blood itself must be primarily regarded, so that the business of specialty may not encroach upon the faculty of medicine, to its ultimate degradation and banishment as such. Not a special case is recorded by a specialist, but what justifies me in upholding the full prerogative of the physician, and in repudiating the practice of the wholesale dismemberment of the faculty now so much in vogue. . . . A college of specialists would indeed be a collection of humbug, and identified with the sophistry that would keep it spellbound by the slime of its fallacies," &c. "The operation of this fallacy would secure some half-dozen of a college the monopoly which would impoverish the rest, even as monopolies of every kind obstruct the general prosperity."

The author then proceeds to introduce a "case in point" —this was one of continued fever, with great hepatic and pulmonary congestions, loathing and rejection of food, cerebral oppression and utter prostration of bodily strength; there were, in addition, involuntary discharges of the excretions, abrasion of the nates, and albumenuria (*sic*), the patient being sixty-two years of age. After giving a careful summary of the treatment successfully adopted by a "physician for all," he winds up thus:—

"In such a case a mere specialist would have been as a Thames pilot essaying the navigation of the wide ocean."

In all fairness, however, to the author, and notwithstanding our disapproval of the occasional ebullitions of disparaging sentiments in a popular work of the kind before us, we are happy to be able to speak of this treatise, as a whole, in terms of favourable commendation. The pretensions of allopathic medicine are even now upon their trial, and the most superficial glance at the unscrupulous efforts which are being made on many sides to depreciate these pretensions should suffice to arouse the attention of the student and junior practitioner to the vital importance of cultivating a spirit of rational and philosophic inquiry, and of diligently investigating those fundamental principles which can furnish the only reliable basis of a sound diagnosis and a successful plan of treatment. One extract more, and we have done:—

"What a tide has been setting in against the physician and his high prerogative,—a tide that has brought upon its stream and surface all manner of noxious things to impair his name, whilst it has strained every fibre or link of his attachments to force him from his ground. The physician, as such, must adhere to order; he must insist upon it; he must exemplify it; and sad it is when there is but the name, the form, the body, and not the spirit in one, or in many of his order. There never was a time in the world's history when the province of the physician was so assailed as now, nor with such bold and insolent effrontery. What an invasion do we not behold upon the fields of order and the plains of truth, to which he, as the student of nature, lays claim, and beyond which he cannot go without the forfeiture of character and confidence. That cannot be orderly nor true that is not natural. And when all things are tried by this test, such of them drop away from the confidence of the community by the action of experience as are in reality disorderly and false. This is the fate that awaits these revivals of old schemes and these new cheats upon old humanity. I have seen the rise and fall of some strange dodges in my day, and I am prepared to witness more events of this perverting nature, if not the decline of one or more of the

present clap-trap fooleries, in illustration and corroboration of my argument. The existence of such pretences to the eradication of evil, or to the cure of disease, irrespective of study, of discipline, and their recognisances, is a scandal upon the faculty of physic, that exists expressly to maintain and supply these requisites. The very toleration of such pretences by the conventions and customs of society, notwithstanding their repudiation by the State and its laws, argues a serious defect in the *kind* of education which the initiating in knowledge are saluted with and nourished by. Such an education must be frothy and watery, and not rich and substantial for the mind's vigour, otherwise this would resist the 'witchcraft' that besets it from within and from without, and adhere to the facts of experience, to the exclusion of the beguiling voice of the imagination. Nor need we wonder at the gain that accrues to such pretenders to an art that exceeds the possibilities of the educated and respectable of the medical faculty; for credulity is the first effect of such mental weakness, deception the second, and impoverishment the third. Oh! how I have known and seen weak people fleeced! In all the range from chiropody to palsy, from obesity to consumption, a plucking process is going on, which renders general and medical benevolence an indispensable provision, to compensate for the spoliation and wrong that befall honesty and obedience. I raise my voice indignantly against this debasing state of society, according to my privilege and my duty, nor will I conceal my shame at witnessing the lack of spirit and unity which the profession in Great Britain evinces to do the same. Order of life is the basis, and the truth of fact the superstructure of the medical faculty, even as of all human faculty, for safety and perfection in all time and to all eternity. On these depend health, recovery from sickness, and lasting happiness. The physician is their voluntary and their acknowledged representative, and his counsels are as meet for monarchs, priests, and lawgivers, as they are for subjects, laymen, and citizens. What is not orderly with reference to the welfare of all conditions of men, he discountenances as unfavourable to life; and what is not true in relation to the testimony supplied by the facts of nature, he rejects as false to truth: and by virtue of this his profession he exemplifies the good constitution which he aims at establishing, as a permanent institution for myriads to enjoy, and for myriads upon myriads yet unborn to be determined unto, according to their ability and destiny, as will be demonstrated in the forthcoming *Third Curriculum*."

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*Alcohol: its Place and Power.* By James Miller, F.R.S.E., F.R.C.S.E., &c., &c. Fifteenth Thousand. Glasgow: Scottish Temperance League. London: Houlston and Wright, and W. Tweedie. 1858. 16mo, pp. 151.

This little work is addressed strictly to the general public among whom it has already obtained a very wide circulation;

at the same time, it is eminently calculated to interest and instruct the medical practitioner.

It is of the highest importance that the public should be rightly informed on the subject of which it treats, and the author has proved himself to be unusually well qualified for this difficult task. His knowledge is accurate, his style attractive and elegant, and his illustration fertile and apposite. Evidently prompted by benevolent feelings, yet he submits his opinions with a moderation that on this subject cannot be too highly commended. His book in this respect contrasts very favourably with many popular works on temperance, whose writers are more solicitous to give piquant force to the prejudices of the class for whom they write, than to teach valuable truths, for the successful investigation of which, indeed, they are, for the most part, quite unprepared by previous training.

The uses of alcohol in medicine are admirably described, and the author's views on its mode of action obtain our cordial approval. It is only when he approaches the hygienic section of his subject that we find it necessary to express dissent. Mr. Miller leans to total abstinence, which we believe to be wrong in theory, and often mischievous in practice; but we so recently discussed the whole question of temperance and total abstinence, that the reader will not expect us to open it anew on the present occasion; and we are content to state that the perusal of Mr. Miller's book only strengthens our conviction of the truth of the principles advanced in the review of the works of Carpenter and Thomson[a]. It is, however, only just to Mr. Miller to state, that he assigns to spirit a very high place as a medicine, and is very far from ignoring its value in counteracting the wear and tear of body and mind in the struggle of civilized life.

Mr. Miller divides food into the heat-making and nutritive, and places alcohol in the first division, following in this the example of Liebig, who here, as in his explanations of the action of cod-liver oil in phthisis, and of iron in chlorosis, allowed his imagination to travel far from the region of dull fact. Is spirit nutritive food or not? is an exceedingly difficult question, and does not admit at present of a precise answer. We need more observation and more experiment. Much that is written on it is highly conjectural, and wanting in the firm basis of fact that is so readily assumed for it. There is good reason to believe that alcohol is not all "burned" away, and it is an everyday observation that its

[a] See vol. x. of our present Series, page 150.

habitual use lessens the need for food, and, at the same time, causes plethora. There is no denying the frequent coincidence of these two results. Now, either the spirit must cause the better making into blood of the smaller quantity of food taken, or is itself assimilated and used to build the framework of the body. It probably acts in both ways—both as a true *medicinal* tonic, and as a tissue-forming food. The elements may be used to make many of the constituents of the body, but its composition renders likely its conversion into oil—and alcoholic plethora shows especially an increase of fat.

Too much importance has been assigned to this question of the assimilation or non-assimilation of alcohol. That it nourishes the body, cannot justify or lessen the evils of its abuse; and the advocates of temperance have most unwisely strained science in their anxiety to prove that it does not. Alcohol is bad enough, and has sufficient, in all conscience, to answer for, and the cause of temperance is not promoted, but seriously hindered, by exaggerating its evils and ignoring its virtues.

It is said to check the waste of tissue—but if every display of function involves in the organ a necessary loss of substance, the exalted functional activity produced by an alcoholic stimulant must be accompanied by increased wear of structure.

In connexion with temperance there is a little point, the importance of which has been overlooked. We allude to the want of warm non-alcoholic dinner drinks. Spirituous liquors are often taken with or after dinner—not as food, nor as a luxury, but simply because they make digestion easier than cold water. A certain warmth is necessary to digestion. Persons of feeble digestion have small power of making heat, and cold water with the meal is injurious, by enfeebling the stomach and unduly depressing the temperature of its contents. We have seen many patients in whom these effects of cold water were marked, and this is the reason why some use tea or coffee, and others, negus or punch, immediately after dinner. Tea three times a day is not desirable. We have found warm aromatic drinks with this meal most valuable, in making easy the digestion of atonic dyspeptics, and of that large class of town livers whose bodies and stomachs are weak, but who do not consider themselves within the limits of disease—and we believe that the more general introduction and use of such drinks would materially help the cause of temperance.

In the following specimen of the author's style, Mr. Miller

describes, very happily, the true place of alcohol in the treatment of fever:—

"In certain fevers—such as typhus—there is marked and dangerous tendency to nervous depression; under which, if unchecked, the vital functions become faint, and are apt to cease. Practitioners have in consequence learnt, in certain cases, and still more in certain epidemics, to anticipate and oppose this evil, by an early and judicious use of stimulants. What! wine and brandy in fever! Most certainly. Then is the time to see the use and value of alcohol. There is nothing in nature without its use. Scorpions, snakes, fleas, bugs, and such like unpleasant and apparently unprofitable specimens of zoology, may sometimes puzzle the ordinary observer who would define their exact use in society; yet, bewildered though he be, he may rest satisfied of this, that their operations *are* beneficial, *sometimes* and *somehow*. And so of alcohol. Often it is most noxious; and looking at the wide-spread mischief that it is ever working around them, superficial observers may be tempted to think that it is only evil, and evil continually. But in this, as in other things, the saying of the wise man comes true, 'To everything there is a season, and a time to every purpose under the heaven.' While standing at the bedside of a fever case—urgent, yet doing well under wine—the ship in a a terrible sea, yet obeying the helm in its every turn, and steering steadily—I have often wished to have a tippler or a drunkard on one side of me, with a 'fanatical teetotaller' on the other, in order that I might have the pleasure of saying, 'There, gentlemen, there is a glorious example of the true use of wine.' The man is taking a tablespoonful of sherry, every hour, or every two hours—or a somewhat larger allowance of claret, or a smaller proportion of brandy,—the form and dose of the alcohol varying to meet the varying phases of the disease; and at every dose you can almost see—far more truly than you can see grass growing in a warm summer shower, after long drought—health returning to the otherwise sinking frame:—the cheek less flushed, the skin more cool, the eye more steady and clear, the pulse less frequent and more strong, the tongue more moist and clean, the breathing easier, the sensations all more comfortable. What is the alcohol doing? Not feeding the man in reality, as one might be apt to suppose; but stimulating the nervous system; spurring the nerves and nerve-centres, and keeping them awake, when otherwise they would go to sleep, and leave the vital functions, first to flag, and then to fail utterly—going to sleep too. The nervous power is kept active, and this excites the vital force to work also. 'But the vital strength,' you will object, 'must be soon used up in this way—exhausted.' There is a risk of that, no doubt; but better to run that risk, than let all perish at once without an effort. And by and by the stomach will be enabled to receive some *food* again, and to digest it too; whereby

the vital strength will be sustained and replenished, so as to meet the strain. The steamship in the storm—to take up our illustration once more—has but a limited supply of coal; and a vigilant production of steam, to work the engines, as she labours in the sea, will tend ultimately to exhaustion of the store, no doubt; but still the only chance of safety lies in 'cracking on,' with the hope that thereby she may be enabled to reach some friendly shelter, to both 'coal and water' for the rest of her way. . . . .

"Of course the beneficial effect will be most marked in those who, when in health, are least in the habit of taking alcohol in their ordinary beverages. In such persons each spoonful tells with a vigorous stroke on the virgin nervous centres; whereas, in the 'seasoned' organism much of the alcohol will be wasted in bringing up the nerves to their ordinary 'par,' and even then the stimulant effect cannot be expected to prove so successful. Slight touches of the whip are sufficient to keep the fresh horse np to his traces; but the scourge must be laid heavily on the jaded hack, and withal there will be infinitely less power in the pull that follows."

Mr. Miller's book is worthy of his distinguished position and high reputation, and is well fitted to enlighten his fellow men, and promote the good cause of temperance.

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1. *Observations on Naval Hygiene and Scurvy, more particularly as the latter appeared during a Polar Voyage.* By Alexander Armstrong, M. D., R. N., &c. London: Churchill, 1858. 8vo, pp. 117.

2. *Hygiene; or, Health as depending upon the Conditions of the Atmosphere, Food and Drink, Motion and Rest, Sleep and Wakefulness, Secretions, Excretions, and Retentions, Mental Emotions, Clothing, Bathing, &c.* By James H. Pickford, M. D. London: Churchill. 1858. 8vo, pp. 290.

3. *Sanitary Science: its Past and Present State. The "Address in Medicine," delivered at the twenty-fifth Meeting of the British Medical Association, held at Nottingham July* 28, 29, *and* 30, 1857. By Wm. Tindall Robertson, M. D., Edinburgh, Extr. L. R. C. P. London, &c., &c. London: Walton and Maberly. Pamphlet, pp. 32.

1. Happily, the disease treated of in the first book which stands at the head of this notice is now comparatively very rare, and the seafaring man is but very seldom, indeed, subjected to the dreadful sufferings of scurvy. All who have read the voyages of Anson and of the early circumnavigators will recollect the terrible scenes therein depicted, when the poor exhausted

crews, worn out by hardship and toil, and without any nourishing food, fell victims to the then dire scourge of our royal and maritime navies. At the time referred to there were several causes which produced the sad ravages of sea-scurvy, and all of which arose from either a total disregard or an unavoidable non-application of sanitary principles. Since those days, however, these important principles have made themselves understood, and dryness, ventilation, personal cleanliness, wholesome food, and proper clothing have been recognised as essential to health on shipboard. The changes that have taken place in maritime matters since the time of the early navigators have been, indeed, of vital importance to all "who go down to the sea in ships." Rarely now does the pestilential fever, dysentery, or scurvy attack our fleets, and when a single vessel suffers from any of these diseases, it is almost certain that some local exciting agent exists, which should not; that some sanitary neglect has been perpetrated or permitted; and hence the penalty which is paid by the passengers or crew. On board her Majesty's ships of war the strictest regard is paid to cleanliness and having everything in beautiful order; and during the last thirty years, especially, health-preserving regulations have been usually adopted; so that the mortality within the last forty years has been reduced from 30 to about 13 per 1000 men per annum. Seventy years since, the mortality was so high as 123 in the thousand! This reformation has been gradually brought about, and we may hope that by perseverance in observing the principles of hygiene, a still greater immunity from disease may be obtained among our seamen, the bulwarks of our country. In fact, the authorities should spare no trouble or expense in maintaining the health of our sailors at the highest possible standard; both policy and humanity indicate this as the only wise course—and hence every suggestion which is based upon experience and sound principles should be adopted, carried out in the navy, and enforced by legal provision upon the attention of owners and captains in the mercantile marine.

Among the many suggestive works that have been published relative to hygiene, few claim more attention than the excellent book now under consideration, from the pen of Dr. Armstrong, R. N., well known as the author of "A Personal Narrative of the Discovery of the North-West Passage." His admirable observations on naval hygiene and scurvy are deserving of all praise, and are calculated to do a vast deal of good; they are especially worthy the notice of the young surgeons of the navy, who throughout the pages of the publication will find most important information and useful hints; and as

the health of the seaman so much depends upon the skill and enlightened action of the medical officer, it is the duty of every one who intends to enter the medical department of the navy to make himself thoroughly master of every matter that bears upon the sanitary condition of a ship's company in every part of the world.

In the pages of Dr. Armstrong's little work, as we have said, will be found many excellent suggestions for the preservation of health on ship-board, and admirable rules for the prevention of scurvy, and for its treatment, should it unhappily arise. We quite agree with every one of the views expressed by the intelligent author, and we cannot do better than urge every one of our readers to procure the book and peruse it carefully, and each will be enabled to see how completely sanitary principles, when duly enforced and administered, can preserve the health under circumstances the most urgent and trying. We cannot dismiss our brief notice of Dr. Armstrong's excellent treatise without referring to the honourable testimony he bears to the high character and professional attainments of his medical brethren of the navy. Under trying and discouraging circumstances, these officers have been the means of improving greatly the health of our seamen, and enforcing upon the authorities those prophylactic measures which have so materially and happily reduced the once awful mortality in the navy. Well may Dr. Armstrong say that "he is proud to belong to such a class of men;" he has proved himself worthy of ranking with the best of these reformers, and he has thus added another to the band of self-denying men who have done so much for a generous profession, and for a gallant and noble service.

2. The work of Dr. Pickford, as the title-page indicates, refers to many matters which more or less affect the health, and which, according to their several conditions, exercise a direct influence upon the human system. The book before us is "the *first part*" only of the subject, and "embraces the physics of the atmosphere, the seasons, temperature, rain, winds, and pressure; the respiration of plants and animals; the circulation of the blood; the chemistry of respiration and animal heat; infection, contagion, malaria, sewerage, drainage, ventilation, and climate, in connexion with disease." A second and a third part are promised. The part before us affords a very ample field for observation, and the author certainly has brought forward a very large amount of information, gleaned from almost every available source, and hence he has given to the world a compilation

of facts, and the result of research and experience; for he states in the preface that his "aim is to present to his professional brethren, to the medical student, and to the public at large, a plain and faithful transcript of accurate research, observation, and experience,—a simple and exact statement of facts and of admitted truths, together with such inferences and deductions as the subject may appear to warrant and demand." We are of opinion that a work of the kind was very much required, and that Dr. Pickford has rendered good service to the sanitary cause in bringing out the present publication; for, as he justly remarks:—

"On matters of hygiene we have in this country no standard authority, no single work, no condensed summary, no manual even to which to refer. Its immutable and life-giving principles are scattered through piles of volumes, rich in all the mysteries and wonders of creation and of science, but on which, be our resources ever so ample, we have often the greatest toil and utmost difficulty to fasten."

And again:—

"It is to endeavour to supply this desideratum that the writer has ventured to embody all that seems necessary to be acquired on those various subjects which make up and constitute hygiene."

There cannot be a question but that the author has expended a great amount of research in bringing together the component parts of his treatise, and that he has thus enabled the student to gain by easy means the condensed information which the work affords.

Sanitary science is still in its infancy as regards the action that many atmospheric and telluric phenomena exercise on animal life; and every contribution that endeavours to throw some light upon those hidden, but, doubtless, important and powerful influences, aims in the right direction, and helps to lay a foundation for knowledge that must become beneficial to man. We have only to recollect the rapid strides that have been made within the present century in removing many of the preventible causes of disease, and thus materially lessening the ratio of mortality, to be convinced that we have much in our power; but we must remember that much, very much, remains to be accomplished, and that we must labour in every successive year to open up a fairer path to the attainment of the great desideratum, that man shall die only in the "course of nature," yielding slowly to the immutable decree; and shall not perish untimely, as now, from causes which it is within his own power to avert or control. What a dark infatuation it seems,

that communities of men will prefer to fold their hands and quietly submit to be slaughtered, rather than battle against insane prejudices, and the thousand wrongs which the vested interests and the so-called legal rights of the few inflict upon the multitude! Against this apathy, this madness, the members of the medical profession have been long contending; their efforts have been crowned, in many respects, with signal success; but a vast work still lies before them, and they must not relax in their efforts: the cause is holy, the object to be attained glorious; hence, every one of us, with the smallest germ of philanthropy in his bosom will arouse to the work! Our warfare is against the preventible causes of death—the battle is for "dear life" itself! Dr. Pickford's present and his promised works are in the right direction; the volume before us is written in a popular style, and will serve to teach the people much that they ought to understand. In fact, the public must be indoctrinated in the laws of hygiene before they can place a proper value upon sanitary improvements, and bestir them in overcoming that "*vis inertia*" which so impedes progressive improvements—especially in those matters which do not yield an immediate and palpable return for whatever outlay has been incurred.

3. "The past and present State of Sanitary Science" proves the hard struggle that the sanitary reformer has had in his philanthropic undertaking; and the pamphlet, "The Address in Medicine," from the pen of Dr. Tindal Robertson, shows very clearly that while much has been done, a vast deal remains to be accomplished still. Speaking of the cholera, he says:—

"The great pestilence had its mission, and at length passed away; but fever, consumption, and premature mortality are still completing their ravages amongst us. The great bulk of our working population are still placed in a condition unfavourable to health—a condition that forbids the preservation of the ordinary decencies and moralities of life; and it is only by rigid legislation and earnest diffusion of knowledge that the havoc can be stayed."

There cannot be a question of the truth of what is here enunciated; for it will require the aid of the most stringent measures, united with popular information, to overcome the opposition to sanitary improvement which is based on selfishness, apathy, and ignorance, and which will exist so long as vested interests in every abomination shall remain as the legalized right of the individual. The Legislature must deal

with such wrongs with an exterminating hand; and, now that they have been frightened from their propriety, and turned out of their own Houses *by the nose*, we may hope that they will not only wage war against the filthy Thames, but against every one of those sanitary evils that militate against the health, and, consequently, the happiness of the people. Each of the writers, whose works we have now under consideration, has laboured faithfully in the cause of sanitary science; each has demonstrated the evils which decimate society, and has likewise shown how those evils are to be met and overcome; and we cannot better conclude this brief notice than by recommending these volumes to the earnest attention of our brethren, and by advising them to disseminate the doctrines which they inculcate, as far as time and opportunity permit.

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1. *Börnehospitalet i Christiania i Aarene* 1855–1857. Ved Dr. F. C. Faye, Professor i Accouchement, Fruentimmer-og Börnesygdomme ved Universitetet, Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiania. Christiania, Carl C. Werner og Comp. 1858. 8vo, pp. 88.

   *Report of the Children's Hospital in Christiania for the Years* 1855–1857. By Dr. F. C. Faye, Professor of Midwifery and of the Diseases of Women and Children to the University; Principal Physician to the Lying-in Institution, and to the Children's Hospital in Christiania. Reprint.

2. *Nogle Bemærkinger angaaende Betydningen og Behandlingen af enkelte Uterinaffectioner.* Af Prof. Dr. F. C. Faye.

   *Some Remarks on the Nature and Treatment of certain Uterine Affections.* By Professor Dr. F. C. Faye. Reprint, pp. 12.

3. *Statistisk Berättelse om Kolera-Epidemien i Stockholm år* 1855. Af Dr. C. G. Gräns. Stockholm: 1857. Norstedt och Söner. 8vo, pp. 25.

   *Statistical Report of the Epidemic of Cholera in Stockholm in the Year* 1855. By Dr. C. G. Gräns, Librarian to the Swedish Society of Physicians. With a Diagram.

4. *Den Sanitära Frågan.* Af Dr. C. G. Gräns. 8vo, pp. 23.

   *The Sanitary Question.* By Dr. C. G. Gräns. Reprint.

5. *Folkräkningen i Stor Brittannien år* 1851. By Dr. Gräbs. 8vo, pp. 17.

*The Census of Great Britain of* 1851. Reprint.

6. *Välgörenhets-Kongressen i Brüssel år* 1856. *Rapport afgifven till K. Ecklesiastik-Departementet.* Af Dr. C. G. Gräbs. pp. 48.

*Report to the Royal Ecclesiastical Department of the Philanthropic Congress in Brussels in* 1856. By Dr. C. G. Gräbs. With a Diagram.

1. It having been some years ago determined that the Professor of Midwifery and Diseases of Women in the University of Norway, should add lectures on the diseases of children to his course, Professor Faye, as filling the Chair in question, felt it to be his duty to procure for his pupils the opportunity of combining clinical observation with the theoretical instruction they received. After some delay, the matter was brought before the Storthing, and in 1851 the necessary permission was obtained; and in the commencement of 1855 the building was ready to receive patients; a sum of 400 dollars for salaries and other expenses having been granted by the Storthing.

The hospital is two stories high, and is connected by a door with the auxiliary Lying-in Hospital, the lower story of which has no wards, so that this connexion cannot give rise to any injurious atmospheric communication. The wards in the Children's Hospital are seven in number, some of which are very small, and are intended for infants accompanied by their mothers. The other three rooms have from three to four beds, and the total accommodation is calculated at from twelve to fifteen patients, affording about 800 cubic feet of air to each. The author expresses a hope that a larger and more suitable building for sick children will be provided in the proposed extension of the Royal Hospital, and that a physician will be hereafter appointed to take more special charge of instruction in the important subject of infantile pathology.

The staff of the hospital at present consists of a principal physician, a physician extraordinary and two candidates, a head nurse, an hospital nurse, a night nurse, and servants. The pupils in the midwifery school may also be called on, when necessary, to assist.

In the course of the year 1855 the number of children admitted was 53, of which 9 remained at the end of the year. During the year 1856, 54 children were admitted, of whom 14 remained at the close of the year. In 1857, 39 children

were taken in, 8 of whom were still in the house at the commencement of the ensuing year. The number of children under treatment in the three years was, therefore, 146. Of these, 110 were dismissed cured; 10 were improved; 1 was sent out uncured; and 17 died. The mortality of the children was, therefore, to the beginning of 1858, 1 in 8·59, or 11·64 per cent. In Francis Joseph's Hospital for Children at Prague, the mortality in 1855, *after deducting the deaths caused by epidemics, tuberculosis, and rachitis*, was so much as 1:8·5. In Dr. Christ's Hospital for Children at Frankfort the mortality in 1855 was 1:3·3; in the Crown Princess Louisa's Hospital in Stockholm it was, in 1854, 1:5, and in 1856 it was 1:6; while in the large Foundling Hospital in the same city the deaths of children, from one to three years of age, were 1 in 2·24. From these statements, adds Professor Faye, it will be seen that the mortality in children's hospitals is very great.

The author appends details of some of the most interesting cases observed in the hospitals, accompanied by remarks on their pathology and treatment. He also gives the dietary of the hospital, and a copy of the diet table of the Hospital for Children in London.

2. The second work in our list is supplemental to Professor Faye's essay on Uterine Deviations, noticed in the twenty-third volume of our present series.

3. From Dr. Grähs' statistical report we learn that the second visitation of cholera, which reached Stockholm in 1853, carried off 2875 persons out of a population of 95,385. To this succeeded, at intervals of about seven months, two new outbreaks in 1854 and 1855, which may be considered as offshoots from the former invasion, and which destroyed respectively, in the capital alone, 560 and 767 individuals. The epidemic of 1855, which forms the subject of the Report, dated from the 31st July. There had been but little sickness in the months of January and February; this had increased in March, and was considerable in April and May, but had subsequently diminished so far that in June and July the sanitary condition of the capital was on the whole very good. In a meteorological point of view, there were no remarkable deviations, either before or during the epidemic, except that the fall of rain in August was unusually great, amounting to 3·697. The heat, which was greatest in July, did not exceed 86° F. The epidemic lasted until the 3rd of January, 1856, that is, for a space

of 157 days, or 22½ weeks, during which time 1356 persons in all suffered in the capital from developed cholera, of whom 655 were males and 701 females, and of whom 767 (364 males and 403 females) died. The per-centage mortality of the males attacked was, therefore, 55·5; of the females, 57·4; and of the whole number who sickened, 56·5. The daily average of sick was 8·6, and of the fatal cases 4·8. With respect to the entire population of the city the per-centage of sick was 1·4, while the deaths were 0·8 per cent. The author appends to his work a very beautiful diagram, exhibiting at one view the mortality from cholera in Stockholm from each of the three visitations of 1853, 1854, and 1855.

As to the origin of the disease, the author adds that, from inquiries made, including the searches of the police authorities, it did not appear that the first who sickened had been to any place affected with cholera, or in contact with persons from such a place, and that no facts could be deduced in favour of the importation of the disease from any other quarter. "Has it then," he concludes, "occurred spontaneously? is such a thing possible? I answer only, with an English author in discussing a similar subject,—'*Cholera, this strange and mysterious enemy, disregards all established laws of epidemics, and flies, with the speed of the locomotive or the ship, over land and ocean.*'"

4. "The Sanitary Question" is a review of some papers in the "Edinburgh Review," and in Chambers' "Papers for the People;" of a Report by the General Board of Health in London on the epidemic cholera of 1848 and 1849; and of an Address delivered by Professor A. Retzius before the Swedish Society of Physicians in October, 1849. None of these papers are recent, and they need scarcely detain us at present.

5 and 6. The fifth pamphlet in our list is on a subject which it would be rather roundabout to study through a Swedish work; nevertheless we must express our satisfaction at seeing the condition of the British people an object of interest to our Scandinavian friends. The sixth, being non-medical, does not call for further notice at present than the expression of our thanks to the author for its transmission.

*Essay on the Pathology of the Blood and its Containing Vessels.* By Thomas A. Wise, M. D., F. R. S. E., F. R. C. P. E., late Hon. East India Company's Medical Service. Edinburgh: Adam and Charles Black. 8vo, pp. 388.

The task of a reviewer, if undertaken in a proper spirit, is certainly one of no ordinary difficulty, as it requires not only a proper amount of judgment in its performance, but likewise a nice discrimination in its execution, in order to award a candid and impartial verdict on the efforts of an author who, perhaps, may have expended much time, labour, and anxiety, on a work, the character of which may form the subject of consideration. We have always considered it to be an invidious office to dash the cup of anticipated triumph from the lips of any individual, but more especially so whenever there may appear a deep and heartfelt desire on the part of a man to endeavour, to the utmost of the ability with which Providence may have endowed him, to add his contingent, however trifling it may be, to the advancement of that peculiar branch of science to which he may have specially devoted himself; but still there are circumstances which, on the other hand, must not be overlooked, and occasions will arise where the hand of a Mentor is sometimes of acknowledged benefit, in imposing a salutary check on that feverish restlessness which urges a man into the field of literature to write a book simply to gratify his own vanity, and to strut for a few short hours of his existence as an author, whose sentiments, be they good or bad, must receive the stamp of publication.

It has ever been our settled conviction that a book, like a man himself, should always stand or fall by its own intrinsic character, and that we have morally no right to condemn either the one or the other until we have taken the trouble of making ourselves fully aware of every point, redeeming or otherwise, that may lie beneath a surface not always prepossessing on a first and superficial examination. The most powerful mind cannot always divest itself of a prejudice when once fairly formed, and, struggle as it may against the influence of this unhappy passion, still its baneful effects will always appear to colour with its sombre shadows the picture that laboriously strains to be impartial, but labours in vain to produce the desired result. And hence arises the absolute necessity of at least endeavouring, by every means in our power, to enter upon a work of this nature with sentiments free and unbiassed, to frame our judgment, not upon principles exactly in unison with our own preconceived ideas, but rather in a spirit of that universal

charity which leads us to seek for a good motive rather than a bad, and a desire to please and instruct rather than the wish for individual display.

We have been induced to hazard these few preparatory remarks before directing the reader's attention to a book which at present lies before us, from the pen of Dr. Wise, for many years surgeon in the service of the Honorable East India Company; and we must be so far candid as to confess, that from the perusal of the first hundred pages or so, we were led to entertain a very unfavourable opinion of the character of the entire work,—our impression being founded on the fact that it was really nothing more than a mere recapitulation of theories long since known to the whole profession, and displaying no novelty that could fairly entitle it to take its place amongst the standard productions of the day. A glance at the preface, however, fortunately explained that this preliminary portion had been published upwards of a quarter of a century back in a Calcutta medical journal, and was now merely reprinted in a collective form, but without any pretensions to originality beyond that which it might have laid claim to at the period when it first made its appearance. It was this that induced us to regard with more critical attention the succeeding portions of the volume; and it is only simple justice, on our part, to acknowledge that we obtained not only much information from their perusal, but were, likewise, greatly interested in many of the details, emanating as they do from one who appears to have been a close observer of what fell beneath his notice, and who has described with a vivid exactness a series of lesions, at the present moment invested with no small amount of importance from the locality in which they have been witnessed.

It would seem that gangrene, originating from a variety of causes, is extremely prevalent in India, and the most trifling sore, if not properly attended to in the first instance, is liable to be influenced by the least irritation, which will rapidly convert it into that formidable affection, so dangerous to the unfortunate sufferer. Amongst the numerous examples of this lesion, as given by the author, we select the following, which he has very properly designated as rare in its nature:—

"Case.—M. B. —— æt. 40, of stout make and sanguine temperament, had been in India for 12 years. In November, 1839, he was attacked by an inflammation of the left eye, probably from using it too much, and not taking sufficient exercise. He soon got well; but on the 1st of January, 1840, he was attacked with acute bronchitis, for which he was treated.

"On the 7th he had an attack of epistaxis; and to-day he first

noticed red patches upon his chest, which gradually extended to the trunk, face, and extremities.

"Jan. 10. Twelve leeches were applied to the chest under the clavicles, where the redness was most vivid. At this time there was considerable redness, and a general swelling of the face and body. This extended to his mouth, and his tongue was so swollen that he could only swallow with difficulty.

"15th. A day or two after this, an abundant secretion of a purulent fœtid matter took place from all parts of the skin. This was followed by an abundant desquamation over the chest, hands, arms, and face. The cough continued. During the night he was slightly delirious.

"16th. The face discharged purulent matter of a fœtid smell; the eyelids were infiltered, and the left eye was again inflamed. The cough very distressing.

"19th. Leeches under the clavicle. From this time, cream of tartar was given daily; and mustard foot-baths to cause a determination from the head were used.

"The suppuration has now extended over all parts of the body, particularly where the skin is bent, as in the axilla, &c.

20th. From the 20th to the 25th the patient is weaker from several slight attacks of fever, which he supposes are caused by the coldness of the weather; and he remained in bed until a flannel dress was prepared. The bowels have been kept open, and changes of temperature are avoided, fresh oil and Goulard's lotion were applied to the parts which are suppurating, in order to prevent too great a degree of weakness from the copious secretions.

"21st. Desquamation commenced in the inside of the mouth, which became so sensible, and the tongue so dry, as to prevent him eating solid food.

"30th The patient is very weak by the copious suppuration, which begins to diminish. He feels well, and is anxious for his warm dress in order to enable him to return to his business.

"Feb. 6th. To-day he felt a severe pain in the left great toe, which is cooler than natural. Heat was in consequence applied with dry friction and camphor-liniment; passed a very good night.

"7th. The patient felt very well. At mid-day he was placed in a warm-bath; a quarter of an hour after, the burning heat returned with great violence, and he was taken out of the bath. Heat to the pained part, and frictions with the tincture of cantharides. The pain diminished in the evening, but returned in the night. The great and the other toes were pale and cold, while the rest of the body was red and hot. A small blister, the size of a crown-piece, was placed, at the urgent request of the patient, upon the great toe, and he was ordered to remove it as soon as he felt the pain diminish.

"8th. On removing the blister 12 hours after its application, the part was found black and gangrenous, and the half of the foot very cold. From 6 o'clock in the evening to 7 A.M. four grains of opium and three grains of camphor were given; frictions with the oil of

turpentine upon the leg and foot, with the application of heat, were continued. Diet,—meat, soup, and wine and water for drink.

"The night was passed without sleep on account of the great irritation of the skin, so as to oblige the patient to scratch himself continually.

"9th. The eschar of the blister has increased in size, enveloping the other toes and part of the foot; but the cold did not extend beyond the ankle. The foot is swollen, and is of a violet colour. There is a sense of numbness in the part rather than pain. The pulse is feeble and frequent. The mouth is dry. Heaviness without any derangement of the head. Diet,—meat-soup, a mutton-chop, with wine and water for drink. Ass' milk during the day. Turpentine frictions continued; they are felt less than yesterday. Four grains of opium and camphor.

"10th. The tongue is better. Has neither had stools nor passed urine for 24 hours.

"Soup, prunes, wine and water, with whey and nitre. Poultices of linseed, mixed with camphor and bark, were applied to the foot, and repeated 6 times a day. In 24 hours he took four grains and a half of opium and camphor.

"To-day I first saw this unfortunate gentleman, and found the whole skin of the body dry, hot, very red, and desquamating. It was very itchy, so as to oblige him to be continually scratching. His mouth was parched with great thirst; he had no appetite; tongue brown in the middle, and clean along its edges, pulse small, hard, and 120. His head was unaffected. All the toes of the foot were insensible, and black; and gangrene had extended along the instep half way up to the ankle. Its edges were pale, and no line of separation appeared. I recommended his not being forced to eat, to diminish the quantity of opium, and give it in the form of Dover's powder; to give an aperient, to continue the poultices, &c., and to be guided by circumstances.

"22nd. I afterwards was requested to see Mr. B. in consultation with his surgeon. We found the patient in a much better state. He said he felt quite well. The colour of the surface of the body was nearly natural, although the desquamation and itchiness continued. The pulse small, soft, and 110; tongue clean, thirst diminished, appetite improved, and bowels regular. The toes were completely gangrenous, and sphacelus had extended to near the ankle, where the line of separation between the dead and living parts had commenced. The ulcerated surfaces were healthy, and some superficial gangrenous slough on the foot had separated, and the surfaces were peeling. Under these circumstances I considered the moment for performing the operation had arrived; and having given the patient a dose of castor oil during the night, the leg was next day removed under the knee.

"On dissection the muscles of the foot were found of a deep dark reddish colour. On cutting through the deep ulcers in the sole of the foot, a quantity of dark, thick, very fœtid pus, which communi-

cated with the metatarsal joints, was evacuated. This proved the necessity of the operation.

"The stump healed up very well, though a small exfoliation of the bone retarded somewhat the cure. His health continues very good."

The case as here detailed is certainly of a most extraordinary nature, and it is very difficult to determine which is the more worthy of admiration—the amount of physical energy displayed by the unhappy patient under such a complicated mass of disease, or the cool resolution evinced by the surgeon who, under such circumstances, had a sufficiency of moral courage to risk a capital operation at so momentous a crisis. The success with which it was attended ought to read us a lesson which should never be forgotten, and teach us the danger of attempting to measure the extent of the rallying powers of the human constitution by any specific formula.

There is one subject in this volume which has been most admirably handled, and the author has sketched a picture so vivid of the disease in question—elephantiasis—that a person could almost fancy it is immediately beneath his eye; and that what he has written has been the result of his own personal observation, aided by that of others, is clearly evident from the following statement:—

"Possessing opportunities of noticing such cases, I requested an intelligent native assistant to note down the symptoms in the following examples of the disease in its primary form, and I had an opportunity of judging of the accuracy of his remarks. I have only altered the language of these notes."

We can only express our regret that we cannot afford room to give those cases in full, but we are anxious to abridge as little as possible the author's own admirable description of the incubation, progress, and termination of this curious disease.

"An attack of elephantiasis is usually preceded by shivering, anxiety, a feeling of listlessness, lowness of spirits, thirst, deranged bowels, and want of appetite. This is followed by a sudden pain in the groin, extending along the anterior and the inside of the thigh, when the leg is the part affected. In other cases the pain is confined to the foot and leg, which are hot, swelled, and sensible. This local irritation is quickly succeeded by rigor, and pain in the head, back, and loins, which is followed by sickness, sometimes vomiting, and great languor, lassitude, and prostration of strength. The pulse becomes hard and frequent, the skin hot and dry, and the patient complains of a burning sensation over the body, with great pain in the leg and foot affected, and often in the head. This hot stage is succeeded by local and general perspirations, with a feeling

of relief to all the distressing symptoms. This febrile attack continues for two or three days, during which it usually increases for twelve hours, and after remaining a day or two in that state slowly diminishes. During the attack imperfect morning remissions and afternoon exacerbations may be observed, which vary in degree from a well-marked state of fever to one that is scarcely observable. In general, during the continuance of the attack, the patient lies in bed, complains of great languor and feverish uneasiness, is distressed by speaking and noise of all kinds, breathes with an effort, and complains of pain in the head and leg. The tongue is covered with a thick white or yellowish coating; he has no appetite, and is prevented taking food, as the natives suppose that it will increase the disease; and for a like reason he is very rarely allowed to gratify his thirst. During the paroxysm any movement is accompanied with pain in the part effected, which often prevents the patient walking for days after the fever has disappeared.

"When the groin and thigh are examined in the acute stage, a swelling may be discovered which extends to the knee-joint, or even to the foot, following in this course the venous branches, and indicated by the pain and sensibility of the part on pressure; the neighbouring cellular tissue of the thigh and leg is swelled, and over it a network of veins frequently appears, having in some places a hard, round cord-like feel, with a slight erysipelatous blush of inflammation along the course of the veins thus affected. The state of these vessels is best observed in the acute primary attacks of the disease. In one case I found, after a paroxysm, the trunk of the saphena major vein prominent on the bent knee-joint, with a hard cord-like feel, and a swelling upon the anterior part of the leg, from which many branches of the vein affected during the paroxysm had arisen. In other cases the local inflammation is confined to the foot and leg, which become swelled, hot, and pit on pressure being made upon them, while the lymphatic vessels and glands of the thigh and groin continue without any apparent change.

"'These prominent veins in the neighbourhood of the inflamed parts during the attack are found,' says Dr. Towne, 'much distended with varicose swellings, which are very apparent from the knee down to the extremity of the toes.' As the disease advances, the local inflammation diminishes, and the distended veins disappear in the increased swelling of the part.

"The degree and extent of this local inflammation vary in different cases, and depend on the constitution of the individual, the stage of the disease, and the severity of its exciting causes. The degree of the swelling varies likewise in different cases, and is first observed along the course of the inflamed veins, and the parts from which they arise, especially in most depending parts, where the cellular tissue is in largest quantities; and it varies in its nature according to the severity of the inflammation, and the frequency of the previous attacks. As the local inflammation diminishes, the

swelling enlarges, and generally pits on pressure being made upon it, but becomes harder and more or less incompressible, and generally of a smooth red colour. It has then an uniform figure, and the skin appears distended, especially when there is much lax cellular tissue, as on the dorsum of the foot and about the ankles. After several days' duration, the cuticle desquamates, and the person feels comparatively well.

"The first attack leaves generally no permanent swelling, but disappears when the paroxysm has passed. The person is again attacked at uncertain periods with the same local and constitutional symptoms, and after several paroxysms a swelling is left, which is augmented by each attack, and diminishes during the intervals. This diminution becomes less marked after the disease has continued a considerable time, as in this case the veins of the part become more extensively diseased, but from the swelling it is often impossible to detect their state; and even when we have an opportunity of dissecting parts which have become deformed by the slow depositions after each accession of the inflammation, it is difficult to determine what state the vessels are in during the paroxysm.

"Sometimes the distended skin bursts or ulcerates in a severe attack, and a discharge of a serous fluid takes place with great relief to the patient. This fluid, as its temperature diminishes, sometimes coagulates into a white mass. In other cases these acute local symptoms terminate in abscesses in the leg or foot, the discharge from which mitigates the symptoms.

"These attacks of fever and inflammation may occur frequently, or at considerable intervals. In general, however, after exposure to the exciting causes, of which cold and moisture are the principal, these attacks occur more frequently; the moon, too, may be observed to have a remarkable influence in producing the paroxysm. In many cases it takes place at the change of the moon, in others at the full, and in some, more especially at the commencement of the disease, at both change and full moon; and in the young and plethoric subject, even at shorter intervals.

"The disease is more rapid in its course in young and strong than in old and weak persons; and as the swelling of the leg increases, the regularity of the paroxysms and severity of the inflammatory symptoms diminish; from the 12th to the 20th year they no longer occur with their previous severity or regularity. In this last stage of the disease, the person seems in good health, the functions of the body retain their natural vigour, and the patient feels no other inconvenience but that of dragging about an enormous mass.

"In plethoric individuals the disease continues with little intermission in a state of excitement, and the deformed skin is exquisitely sensible. In both Mr. Chevalier's cases, the individuals could not walk for years on account of the size and irritable state of the limb. 'One of them was utterly unable to bear being lifted up in

the erect posture, and could only be gently raised from her seat with exquisite pain; mortification at length put a period to her misery."

"In the more chronic form of the disease, as seen in India, individuals may be seen performing in the usual manner all the duties of servitude until the approach of another paroxysm; but the feeling of weakness or very uneasy listlessness, deranged bowels, and want of appetite, which usher in the attack, generally continue after the disease has terminated, and the functions of the deformed part are impeded by the increased swelling. In old cases the local exacerbations recur without any perceptible disturbance of the system.

"*Consequences.*—When the part is examined after numerous paroxysms, it is found much enlarged, and has a hard, equable, shining, and desquamating surface, which pits sometimes on hard pressure being applied. The leg and upper part of the foot are the parts principally swelled, and very large fissures are found on the anterior part of the leg, from the movements of the ankle-joint and the strong fascia covering that part. In other patients, in particular when the disease is long present, the skin becomes swelled in large tumours, or folds, which in some cases hang over others of a smaller size. This appearance is explained by the vessels which are principally affected arising from these parts, and by the quantity of cellular tissue which is bounded by the unyielding nature of the fascia, or continual movements of neighbouring joints, which prevent the enlargement of those parts. In some cases I have found these tumours of the natural colour, and as large as a child's head; sometimes they are in clusters at the lower part of the leg. In other cases numerous tumours of different sizes are found on the upper part of the foot and lower anterior part of the leg, from a very minute to a large size, when they have often a pale colour, approaching to white, with varicose veins ramified along the surface of the larger tumours. These tubercles or tumours are distinguished from the tubercles of lepra tuberculosa from being in the one case round and pendulous, and generally connected by a neck to the leg, while the latter are flat, irregular, and large at their connecting base.

"The skin often continues of the natural colour and structure for years after the first attack, when it becomes of a darker colour, feels dry, with frequent desquamations of the cuticle, particularly after acute attacks. The structure of the cutaneous tissue is thickened, the cuticle having generally a chapped and scaly appearance; in the native the skin becomes almost insensible, and in some places it takes on the dark horny appearance of ichthyosis. These changes seem first to be owing to an extension and thickening of the cuticle, which leave it in a morbid state; the epidermis is very thick, and adheres intimately to the corion. Below the epidermis Mr. Chevalier found the papillæ of the skin excessively enlarged, elongated, and prominent at the surface of the dermis.

"Fissures between the large swelling in the foot and lower part of the leg often discharge a thin transparent-looking fluid, which

frequently becomes like jelly on exposure to the air; in other cases this discharge takes place near the toes, from the abraded or ulcerated surfaces or heads of some of the tubercles, particularly during the exacerbations, which are relieved by the discharge. These ulcers are superficial, and sometimes of a large size, with a hard edge and indolent surface, and are cured with great difficulty.

"In some old cases, the appendages of the skin or toes become gangrenous and fall off; and in the more acute forms, which occur in Europeans, the disease often terminates in mortification of a part of the diseased member."

Although this disease is of such a formidable nature, Dr. Wise is emphatic in stating that persons affected with it often arrive at an advanced period of life, their only cause of suffering arising from the periodic attacks of fever which he has so graphically described. The favourite station of elephantiasis would appear to be Bengal, and its attacks are not confined solely to the Hindoo, but are extended to the European, especially after a protracted residence in the debilitating climate of this country. It would also appear that the female sex are particularly obnoxious to its ravages, and the face, neck, mammæ, upper extremities and labia majora, are equally disfigured by this loathsome disease. We would most earnestly impress on the reader a careful perusal of the entire of this article, as it is unquestionably one of the most able and instructive that has hitherto appeared on this curious subject.

Towards the latter end of the volume, in the article on phlebitis, we find the following case recorded, which is illustrative not only of the quick perceptive faculty of the author, but likewise shows how little value can be placed on post-mortem examinations as conducted in the present day, unless the individual who performs them can embrace as if intuitively, and on a single moment's reflection, all the various causes that may produce the fatal result, and, with the skilful hand of a master, corroborate his anticipations by actual demonstration.

"I found in the dissecting room of La Pitié, Paris, the body of a muscular man, who had had his leg amputated some time before he died. All the splanchnic cavities of the body had been opened without discovering any cause for the patient's death. The veins had not been exposed, and expecting to find them diseased, I proceeded to examine them. On opening the vena cava ascendens, I found its internal surface of a dark uniform red colour, containing several portions of consolidated blood. Eight inches from the termination of the vein in the stump two valves were situated, which appeared more opaque than natural. The internal membrane was irregular in its surface, and easily torn. Two other valves appeared to have been

removed by ulceration, and only irregular semicircular prominences were left. The internal membrane, from this point to its divided extremity, was thickened, irregular, and filled with pus. Its internal surface was of a light colour, and rough at different parts from the deposit of unadhering lymph, which, when removed, left the shining transparent appearance of the internal surface of the vessel. In such acute cases of phlebitis, the irritation of the diseased vein is conveyed along the tissue, and the purulent secretion from its surface passes into the circulation, inflaming the heart and large vessels, and one or more of the serous membranes, according to the predisposition of the individual. In such cases, on dissection, the effects of the inflammation may be traced to the heart and large vessels. On examining the diseased veins, portions of consolidated blood will be found not sufficient to form the boundary to prevent the pus from passing into the circulation; and even when the consolidated blood is more complete, the irritation may lead to the fatal termination."

In conclusion, we would beg to observe that the book before us forms one of that particular class, which we are bound to say are by far too numerous in the present day. Much that is really excellent and deserving of every commendation is found scattered here and there throughout its pages; but then it is so marred and neutralized by stale truths and the recapitulation of facts long since known and established, as utterly to destroy every feeling of interest which, under other circumstances, it was so well calculated to excite. Were the volume intended as a class-book we can well understand how absolutely imperative it becomes to note every circumstance, however trivial it may appear, in order to impress upon the minds of the rising generation by what slow and gradual steps the literature of medicine and surgery has been progressively exalted to its present standard of honourable pre-eminence, but we must protest most strongly against such a system being pursued in a work of a more general character such as the one before us. It is, in fact, nothing more or less than a gross literary imposition, where more consideration has been placed on the bulk than the material, like an apparently massive wall, faced with good brick and mortar, but lamentably hollow in the centre, or at best only filled up with a quantity of contemptible rubbish. Most sincerely do we regret that the ambition of Dr. Wise was not of a more circumscribed nature, as it might have prompted him to write a book of a much smaller caliber, and in doing so the many novel subjects of his present production, if judiciously arranged, fortified of course by brief and apposite quotations from writers of acknowledged merit,

would have formed an honest and reputable foundation on which to erect his claim to the character of a close observer and original thinker.

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*Precis Iconographique des Bandages, Pansemens, et Appareils.* Par M. le Docteur Goffres. Paris: Mequignon Marvis. 1857. 18mo, pp. 595.

To analyze such a work as the one before us would be alike tiresome and useless. The greater part of its contents can only be properly mastered by a careful comparison of the text and the illustrations, and as it is impossible to transfer the latter to our pages, we must fain omit any lengthened reference to the former. Letter-press descriptions of the modes of applying bandages, even when minutely accurate, must fail in conveying to the mind any adequate notion of the processes. So that, were we simply to confine ourselves to this part of a reviewer's work, we should be able to say but little, beyond some well-merited praise of the able manner in which all connected with this admirable work have fulfilled their respective tasks. It is hard to say whether more credit is due to the author for the clearness of his descriptions, or to the artists who have drawn and engraved the illustrations. Some of these are perfect pictures, not only as giving at a glance the entire process of applying various complicated bandages or apparatus, but for the elegance of their finish and the accuracy of their drawing. Yet we must not forget that a reviewer has often a higher and more difficult task to perform than that of analysis, or even of meting out praise or blame. Reflections will often occur to him in connexion as much with the subject of a book as with the mode in which the subject may be treated in the works before him; and there are many reasons why, at the present time, *petty surgery* should claim some attention at our hands. First, is the sad reflection that it is a subject almost wholly neglected by the mass of students; and next comes a host of reasons why this is so, and the more difficult task of considering the appropriate remedy. Certainly, if we take the average of our hospital classes, we shall be obliged to confess that large numbers of our students pass their whole term of studentship without properly learning the various details of petty surgery; nay more, that were they put to the test at their final examination, a large proportion—might we not say the majority?—would egregiously fail in even the simplest appliances of dressings and

bandages. Is it not a fact that surgeons, men with diplomas in their pockets, at some of the earlier examinations for public medical appointments, failed to go through the steps of the simple act of venesection? Yet these men had ample periods of study, and superabundant courses of lectures. If we compare the average daily attendance at our best attended hospitals with the number of pupils on the roll, what proportion of the nominal class shall we find following the medical officers in their daily rounds? Probably one-third would be a very high average attendance. And how many out of this third are *bonâ fide* students; how many superadd to walking the hospital a careful noting of the cases; how many act as dressers; how many assist the surgeon in the application of apparatus; how many, if called on, could themselves put up a fracture, and properly dress a simple wound? Hospital surgeons will know what to answer. Probably some dozen or half dozen in a hundred.

Where, then, are the pupils? Are they systematically idle, and do they absent themselves from the hospitals merely from unwillingness to rise early and work? Doubtless this is the case with some, but it will not account for the mass of absentees. The bulk of the classes at the hospital hour is engaged either in preparation for or attendance at the morning "grind." To follow the inquiry still farther,—why is the "grind" preferred to the hospital? Here, too, the answer is easy,—because the "grind" is the best preparation for the examination, and the passing of the examination is the sole legal test of capacity for practice. What a monstrous contradiction have we in this! The test for capability of practising is an examination which entices, if it do not compel, the student to desert the practical field of the hospital for another place of instruction, which must be inferior as a substitute, because wholly theoretical. However valuable catechetical instruction in the closet may be as an assistant, it can never rightly replace bedside instruction. Its place is to elicit knowledge, not to convey it; and we deeply deplore the ever increasing, though natural tendency, there is in all who resort to it, whether as teachers or pupils, to make it the means of imparting knowledge. Much of this error has arisen from the imperfect preliminary education of youths who come to the profession. The present legitimate and recognised system of teaching is by lecture. Now, however admirable as a means of instruction lecturing may be, when the lectures are addressed to well-educated men, there is a vast difference in the results attained when the lecturer has for his audience many whose minds are imperfectly trained by previous studies for the reception of new truths. How often has the lecturer found that

his lectures were plain and intelligible only to a few, and that, after labouring to make a point clear to the meanest capacity, some student, after the lecture is over, has come forward with a query that showed how little of the train of reasoning, or exposition of fact, had been understood by him! To receive new facts into the mind, the mind must be opened up by previous culture, or the seed will lie on the surface and be scattered to the winds. Lecturing cannot penetrate the previously unbroken soil, and hence we have a system of grinding to scratch the surface, and throw up a temporary promise of crop which will satisfy the examiner. We need not wear out our reader's patience by riding the metaphor to death. No further reference is needed to the stunted and withered produce of this shallow cultivation.

It is to this imperfect preliminary education, and to the simultaneous overgrowth of the lecturing system, that the evil is to be traced, and the evil is to be met by improving the one, and reducing the amount of the other, rather than by any blind attack upon the system which has taken its place. The students readily settle the balance of over-lecturing by the simple practice of non-attendance, and this evil thus cures itself. The London College of Surgeons, seeing this, has reduced the number of lectures to be required of English students seeking its diploma. As far as this is the abolition of a sham, it has our hearty approval. We wish it were as easy to remedy the other evil.

To return to our book. We have here a work which should be in the hands of every hospital surgeon. Every variety of bandage is in it enumerated and figured; and though every surgeon in any practice may be able to apply bandages with sufficient neatness and dexterity, still he will find the advantage of practising at times with his pupils some of the less common varieties. They are occasionally necessary, and familiarity with them will assist in giving facility to his hand; besides, the book will recall many things to his mind which as a teacher he should remember, though as a practitioner he may seldom have occasion to use them.

The book is very ample on the subject of bandages and dressings. This is natural in a French work. The fashion in dressing in Paris is, generally, to overload the wound with dressings. Charpie, lint, napkins, bandages, are piled and heaped around the injured part, with the intention of excluding the air and preventing purulent absorption. All our countrymen who have followed the practice of French surgeons must have remarked this. The natural result is inflammatory

action and increased suppuration in the part. The pus is confined, and angioleucitis arises; dressings are still applied, and sometimes with redoubled diligence, until erysipelas of the worst type and purulent absorption take place, the result of the very means taken to avoid them. Another evil of French dressing is the *nimia diligentia.* We have seen extensive suppurating surfaces, such as are left after the sloughs have separated in burns, dressed daily with stimulating dressings. The needless exposure to air and the over-stimulation produce very intractable sores; and the worse the sore becomes, the more is the interference of the dresser redoubled. In these things we do not recommend French surgery to the imitation of our readers, but in the admirable minuteness with which the details of petty surgery are taught we are unable to compare with them. The student cannot advance a step without a thorough familiarity with this branch of his studies, and the highest clinical surgeon is not above taking notice of the student who acquits himself well or ill. It is true, that from the size of their hospitals and the number of their patients, the surgeons do not themselves instruct the juniors in these matters; but the staff of clinical assistants, of all grades, is so numerous, that every pupil has plenty of means of learning at his disposal, and the various examinations he has to undergo render it necessary he should avail himself of them.

The portion of the book that treats of apparatus is less ample than the rest; the selections, however, are good, and are characterized, in the main, by an absence of complex machinery. We have most of the valuable modern improvements, though not always under right names: as, for example, when L'Estrange's adaptation of the canal-boat catch to the reduction of dislocations, is introduced to us as Charriére's instrument *de détente.* We have the swinging apparatus for fractures, irrigating machines, some nice, light-looking splints of M. Mayor, made of wire-work, and the two great modern improvements for fractures and dislocations fully illustrated, namely, Baron Seutins' starched apparatus, and Colombat's mode of reducing dislocations by manipulation. We miss the simple and convenient galvanic apparatus of American origin, and, as is natural, the authorities referred to are generally French. The names, however, of Cooper, White, Pott, Monro, and M'Intyre, occur not unfrequently, and show the author to be fairly acquainted with the literature of his subject.

We have in conclusion, only to express again our pleasure at meeting so elegant a little work, and to congratulate all concerned in its publication upon so excellent a result of their combined labours.

*A Manual of Obstetrics, Theoretical and Practical.* By W. Tyler Smith, M. D., M. R. C. P., Physician-Accoucheur and Lecturer on Midwifery at St. Mary's Hospital. Illustrated with 185 Engravings. London: Churchill. 1858. Fcap. 8vo, pp. 628.

Men's minds, it has been said, are as variously constituted as their faces. Be this as it may, it is, at all events, true that different minds require to have information presented to them after different fashions. To one, the statistical table, with all its details, is necessary; to another, it is fatiguing and repulsive. To some, a compilation giving the opinions of good authorities, in their own words, is most suggestive of thought; to others, a work formed on such a plan is little more than an unconnected tale. Under these circumstances, the multiplication of books, especially of class-books, is not a great evil,—on the contrary, may be a great benefit; yet let not the formation of such be undertaken lightly, for it involves great responsibility. Who can limit this responsibility, or say where it will end? Let him, then, who undertakes to write a manual for students do it calmly, carefully, and seriously, as becomes one whose teachings may influence the lives, happiness, and character of widely extending circles. We have been led into these reflections by the perusal of the preface to this book, in which Dr. Smith begs that the consideration of the little time he has had for preparation, and the labour involved in writing in the midst of the busy avocations of practice, will be allowed to plead as some excuse for any shortcomings which may be evident to the critical reader. In other works such an excuse might be held valid, but so sacred do we hold the mission of the teacher that we could not admit it for an instant in a manual intended for students. We are happy to say, however, that there was little necessity for making such a plea on the present occasion; for, though there are faults both of omission and commission throughout the book, it is one that will, we think, be found to be a valuable addition to Mr. Churchill's series of Manuals, of which it forms a part.

Dr. Smith writes in a peculiarly attractive style; his powers of description are especially good; and, in conveying his information, he does it in his own words, instead of compiling quotations from other writers, whereby his influence over the mind of the student will, we think, be greatly increased. To the physiological and theoretical portions of the book great care and attention have been given, and, as might be expected from the author's previous writings, these parts of the work are exceedingly good. In the more practical details there are some

parts, we think, capable of considerable improvement; but, on the whole, the book is well fitted for leading students to become good and scientific practitioners of the obstetric art.

We have noted some few points for special reference: thus at page 62 we have a suggestion as to the nature of menstruation, which we do not remember ever having met before, and which seems to accord more with established facts than any other. Dr. Smith believes that at each menstrual period the mucous membrane of the uterus is, in great part or entirely, broken up, and its *debris* discharged; and that a new membrane is formed, as a preparation for the reception of a fecundated ovum. This idea is supported by many facts, which are well stated, and seems to us to be incapable of any other explanation. At page 71 we have the formation of double monsters considered, and the theory of St. Hilaire, as to their being the result of the union of two originally distinct ova, is adopted. This, we apprehend, is one of the results of our author's haste, as the researches of Vrölik, Allen Thompson, &c., have shown these monsters to be the result of a process occurring in a single ovum. Dr. Smith's belief in the diffusion of the nervous material throughout the cord, and his idea as to the cause of the twisting of the vessels of the cord, are also points requiring further consideration. At page 173 we have some good reasons adduced for the belief in the possibility of superfœtation; and at page 182 there is a good account of that curious phenomenon, "missed labour," which, it is stated, has not hitherto been mentioned in systematic treatises on midwifery. The next point we would notice is of more practical importance,—it is as to the active dilating powers of the os uteri. In a previous book, if we remember rightly, Dr. Smith adopted fully Marshall Hall's idea as to the active dilating powers of the sphincters; now he seems to have modified his views, but his language on this point is obscure. We do not believe in this power of active dilatation at all, and are apprehensive that even Dr. Smith's guarded recognition of it may lead to errors in practice by making students careless as to preserving the membranes in the early stages of labour. The chapter on the mechanism of labour is very good; several of the figures illustrating it are original, and well calculated to convey a correct idea of the process. However, we fear that many a student will be puzzled by a transposition of the words "large" and "small" that has occurred, to the great detriment of the meaning, at page 278. We have also found the meaning obscured by another misprint at page 456.

We now arrive at the chapter on the management of natural

labour; and here there are several points that we would recommend a more careful consideration of in the next editions of the work. We find no allusion to what in Dublin we are in the habit of teaching, as what Dr. Collins calls a "paramount duty," viz., the following down the uterus with the hand during the expulsion of the child, so as to insure permanent contraction. We would also desire more explicit directions as to the application of the binder. We are ourselves in the habit of applying it immediately after the birth of the child, and tightening it again after the expulsion of the placenta. Latterly some of our Dublin teachers recommend that the uterus should be held with the hand until the placenta is expelled, and then that the binder should be applied as the more certain method of insuring a permanent contraction. Dr. Smith seems to think it unnecessary to use any means for maintaining contraction during this stage of labour. We object very decidedly to the directions given as to the removal of the placenta in *ten minutes* after the birth of the child. In the Dublin lying-in hospitals *two hours* are allowed to elapse before interfering, if there be no hemorrhage. Even if it be lying in the vagina, we hold that there will be less risk of hemorrhage, and that the after-pains will be less severe if it is not interfered with till it excites contractions for its expulsion.

We would suggest that in future editions there should be an entire chapter written on the management of the placenta; as it is, we have only incidental notices of it. Retention from inertia is considered in the chapter on post-partum hemorrhage; that from irregular contraction, in the chapter on "Inversion of the Uterus," &c.; and the form arising from morbid adhesion is nowhere alluded to. To add to the difficulties of the student, there is no reference to retained placenta in the index. Marshal Hall's "ready method" of resuscitating children might also receive a greater share of commendation than it has in this edition.

The chapter on the management of the puerperal state is, on the whole, good. The remarks on the propriety of allowing good diet as soon as the secretions are fairly re-established, we fully concur in; and also the warnings as to the evil of the too early assuming the erect posture, and returning to the ordinary habits. We hold that eight or ten days is not too much to retain the horizontal position. Indeed, we are in the habit, where it can be done, of recommending fourteen; and after that, of requiring, with Dr. Smith, the patient to rest on the sofa a great part of each day during the puerperal month. The following passage in this chapter we must except from our com-

mendations. Deficiency of the lochia from *retention* we have never seen; and the practice recommended of frictions, and washing out the uterus, we believe to be decidedly bad :—

"It is of importance that the lochial discharge should be free. In the event of deficiency from retention in the uterus or vagina, friction of the abdomen should be practised, with a view to excite contractions of the uterus, and the expulsion of any collections in its cavity. Warm water, infusion of camomile flowers, or a weak solution of chloride of lime, should be injected into the vagina two or three times daily; and in cases where actual mischief is apprehended, the cavity of the uterus itself may be washed out."

The chapter on convulsions is one of the best, as to the causes, pathology, and treatment of the epileptic form of this sad complication, that we have ever read; but even here we have indications of haste in its preparation, in the absence of any account of the symptoms and diagnosis of the attack, or of the hysterical or apoplectic forms of this affection; nor have we any account of the amauroses and partial paralyses often met with in cases of this description.

We trust Dr. Smith's observations will recall practitioners from the too exclusive attention that is at present being paid to uremia as a cause of puerperal convulsions. The influence of uremic poisoning, when it exists, we do not mean to deny; but it is remarkable that there is so little evidence to be had of the presence of urea or ammonia in the blood in these cases. Dr. Simpson and Dr. Christison have failed to detect urea beyond a trace, and we have ourselves made careful searches both for it and ammonia, in several cases without detecting their presence. There is a mode of treatment from which we have seen decided benefit, viz., opiate enemata, that Dr. Smith does not allude to. It appears to us to act by lessening the conducting powers of the nerves of the uterus, and thus cutting off the chief source of excitation from the spinal cord, already in a state of too highly excited polarity.

Among other points peculiar to Dr. Smith in this book we may notice his belief that rupture of the uterus is as likely to occur in first pregnancies as in any other; and we must also draw attention to the preference he expresses for forceps having a second or pelvic curve.

Perhaps the most serious omission in the book is the absence of all mention of accidental hemorrhage. We have a good account of post-partum and unavoidable hemorrhage; but this, which is of not less importance than either, is not described at all.

In thus drawing attention to what we consider defects in this Manual, we have no desire that our remarks should be taken as indicating our general estimate of its worth; on the contrary, it is because of its defects being so few that they are easily noticed, and because of our desire to see them removed from future editions, that we have dwelt on them.

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1. *On Medicine and Medical Education: Three Lectures, with Notes and an Appendix.* By W. T. Gairdner, M. D., &c. Edinburgh: Sutherland and Knox. 1858. Fcap. 8vo, pp. 130.

2. *Four Letters to Sir James Clark, Bart., M.D., F.R.S., on Administrative Reform in relation to Medical Schools and the Examining Boards.* By A. Harvey, M.D., &c. London: Churchill. 1858. 8vo, pp. 80.

3. *L'Enseignement Clinique en Allemagne, particulièrement à Vienne: Projet de Rèforme pour l'Enseignement Clinique en France.* Par le Docteur Gallavardin. Paris: Baillière et Fils. 8vo, pp. 78, 1858.

1. The small volume recently published by Dr. Gairdner consists of three Lectures delivered at various intervals in Edinburgh, and considerably enlarged under careful revision in order to meet the exigencies of publication and accord with the progressive spirit of the times; therefore, although their general tendency remains the same in all, still they are modified by a wise discernment in such a manner as to suit the exact auditory for whose instruction they were intended. We are consequently prepared not only to tolerate, but also to admire, the difference of style adopted by the author when he addresses a class of students, and that marking his address on a kindred subject as read to the members of a scientific institute associated for the purpose of mutual inquiry and philosophic discussion. With the student he is admonitory, enforcing the grave and onerous duties involved in the daily life of a devoted student of our profession, the toils to be undertaken, the labours to be undergone, and the end to be achieved in the career of pupilage:—emulative, in displaying the spirit-moving hopes, the great rewards, the fame and honour that await the zealous labourer in the field of that ancient faith which for near two thousand years has ever been increasing in intensity, but still immutable in its principles, although hourly becoming more perfect in all its details;—religious, as teaching the des-

pondency to be removed by faith in a great cause, the passions to be subdued, the human love to be engendered at this most impressible period of life, as well as the social duties which will surround them in virtue of their position in after life, when they will be not only the friend and adviser, but frequently the unwilling judge of those faults and frailties which the imperfections of man's nature render inevitable.

With the man of general scientific acquirements he pursues a more discursive mode of composition as more suitable to a general auditory than the didactic efforts of scholastic instruction, and exhibits clearly, but yet in general terms, the serious interest which society should take in the education and conduct of the rising members of our profession. He proves how intimately interwoven the physician must be with every moving phase of the social aggregate, how essential to their happiness, how inwrought in every feature of their destiny from life to death. Further, he eschews that system of frigid dogmatism which marked the profession of the past, and demonstrates the incompatibility of its chilling influence with the living progress of our art; and, seizing the dogmatic opinions of the quack, he wields it as a trusty weapon to annihilate their pretensions to infallibility. The third discourse completes what the preceding have sketched out, and deals a heavy but well-deserved castigation to the professors of homœopathy, positively, by exhibiting the dishonour and dishonesty of Hahnemann in the sale of his secret borax salt; and relatively, by examining systematically the claims of medicine as an art as well as a science. These he points out with a clearness and precision so perfect that the essay becomes invested with all the character of an elaborate defence of legitimate medicine. Dr. Gairdner has our unreserved commendation for the spirit of his remarks, and we esteem the publication of these Lectures as an important adjuvant in raising the character of teaching, and exhibiting the spirit which animates those Magi who direct the profession of the future, and who seek to exalt the students of our art by displaying to them the value in its social aspect, and the grandeur in its higher aspiration, of that science which they have made the object of their toil, the goal of their hopes, and the inspiration of their life's labour.

2. The Letters of Dr. Harvey inscribed to Sir James Clark, on the subject of medical administrative reform, possess no small amount of interest at this unsettled juncture of professional legislation. In composition they are didactic, critical, and utilitarian; each sentence being accurately weighed, and care-

fully wrought into a most forcible essay on medical education, which, if not absolutely original, is still sufficiently suggestive to afford hopes that the publication may not be without its good results. Having devoted sufficient attention to the proofs of the great importance of our art, he then deals with the imperfections of our present modes of teaching, taking especial exception to the lecture system. He recommends that the character of lectures should be utterly changed,—that, instead of being elementary, they should be critical and exegetical, leaving the lower forms of instruction to the pages of the class-book. This view so accurately corresponds with opinions we have heretofore enunciated, that it is a subject of congratulation to our feelings that we professed this same plan a few years since in our Journal, and hope yet to see it accomplished.

The selection of special text-books for examination, and the sessional repetition of those exercises, constitutes another novel feature in the author's work, and is one of such importance as to claim the attention of all those engaged in medical instruction. We cannot say that we are convinced by the argument which he brings forward, nor do we think that Irish students will ever become obedient instruments in any system of routine, however perfect may be its details; and as we are convinced that any government, to be successful, must be adapted to the spirit and tendency of those over whom it is sought to exercise a special control, we would accord the greatest possible amount of intellectual liberty to the Irish student: other legislation may, no doubt, be more suitable for the systematic Scotch and persevering English pupil.

3. Dr. Gallavardin, having occupied a summer session in observing the system of teaching (clinical) adopted in Germany, has published in a small pamphlet the results of his labours in the school of Vienna. He does so in the hope that a similar system may be adopted in France; but until our social usages become assimilated to those of Germany, we cannot conceive the utility of carrying out this system to its full extent; still, however, the perusal of the author's views will amply repay all those who take an interest in clinical teaching.

*The Principles of Treatment of Chronic Phthisis Pulmonalis.* By EDWARD SMITH, M. D., &c. London: Longmans. 1858. 8vo, pp. 54.

THE chief aim of the author of the present essay appears to have been to direct attention to that period of the disease in question, and to that condition of the lungs, by which the deposition of tubercle is preceded. Favoured as he has been with a wide and extensive field for inquiry in reference to phthisis, the author has employed his powers of observation and reflection very assiduously, and has carefully noted a great number and variety of circumstances as leading points for inquiry, and in the arrangement of the work before us each point is taken up separately with a view of ascertaining what it has to do as a cause, an attendant upon, or an effect of, this disease. As a guide to the formation of a correct estimate, the following rules are premised:—

"I. A condition to be essential must be universal within the same limits.

"II. But to assume that an essential condition shall be present in every instance of a disease, is to assume that our knowledge of the disease is so perfect as to enable us to limit it with absolute certainty. This is very unlikely in a disease so general as phthisis, and one which acts so extensively upon the system; and by way of analogy we may call to mind many diseases—as cancer and fever—which, having been thought one at a certain period, have been proved to be many at a later and better informed era.

"III. Hence it is probable that in practice an essential condition will not be found in every case of the so-called disease; but if it be found in the vast majority of cases, the probabilities are rather that the remaining cases are not cases of the disease than that the condition is not an essential one; or that these cases have a power as yet unknown, of preventing the exhibition of the influence of this essential condition. The doctrine of probabilities must here have weight, and in our profession it should have a greater weight than the demonstrative habits of the present day are prepared to allow.

"IV. An essential condition having been found, it may have various degrees of influence in different cases.

"V. All conditions which are not essential should be excluded when determining the nature of an object; and in the treatment of diseases they must be regarded as subordinate to the removal of the essential condition."

That a considerable limitation is to be observed in estimating many of the commonly received predisposing causes, depending upon age, sex, season, condition of body, &c., appears from the following conclusions; these being the results at which

the author has arrived upon carefully reviewing the several predisposing circumstances.

"I. That not one of them singly is essential in the production of phthisis.

"II. That condition of life, country, and education, are problems too complex, and composed of elements too varying, to permit of an accurate estimate being made of their influence in the production of phthisis.

"III. That we know too little of the influence of stature, season, temperament, and condition of body, to estimate their influence.

"IV. That age appears to have influence, and one which our present knowledge enables us to define in a general manner; but it is probable that, as with sex, the influence is rather that of the attendant conditions, and that the value of age in the inquiry is to enable us to place limits within which these causes are most powerful.

"V. That in order to arrive at accurate conclusions, we must analyse the causes until we have separated all their elements. This is done by considering the influence of food, clothing, exercise, abuse, anxiety, occupation, &c.; although these circumstances singly never act alone, and cannot therefore be estimated with absolute truthfulness, we may arrive at the general expression, that phthisis may be due to some or all of the conditions which induce an excess or a defect in the natural powers or actions of the body.

"VI. That although we may not be able to define the extent of the influence of any cause so as to give the proportion in which many of them may relatively be instrumental in producing phthisis, or in which they may be powerful in producing phthisis more than other diseases, we may reasonably be permitted to ascribe to them a certain power in its production, but we must be content with that and not make comparisons, *inter se*, whilst the influence of each is understood."

The disputed point, as to whether the deposition of tubercle shall be considered the first step in the disease, is considered at some length. Supposing the existence of such deposition to be assumed as affording a definite period from which to name the disease, and to calculate its subsequent duration, the author argues that if this were the starting point, it would not give the required information, inasmuch as in many cases this condition of the lungs has not been suspected until necroscopic examination has revealed it to have existed; while in some cases of disease, in which the physician is led to examine the lungs most carefully, the existence or non-existence of tubercle in its earliest condition has failed to be settled beyond doubt or dispute. He maintains that tubercular deposit is not the first step in chronic phthisis. The grounds of this belief are thus briefly stated:—

"I. That whatever tubercle may be, it must be due to anterior causes, and there must have been a period prior to the deposition of tubercle, in which those causes acted.

"II. It is universally admitted that a predisposition to phthisis exists and is demonstrable; and so long and widely has this been known, that non-professional people are enabled to indicate its existence. Then, as in those persons having this predisposition there is a greater probability that they will have the disease than that they will not, or than that others will have it, there must be a true relation between that state and the disease. Now, assuming that tubercle is the starting point of the disease, as they have not then the disease they have not tubercle; but as they are the persons in whom the disease—that is, tubercle—is most likely to occur, they are in the stage which precedes tubercle, that is, in the stage in which the causes are acting which must precede and which produce tubercle. I know well that the difficulty lies in proving a connexion between these two states, which is either a necessary antecedence to, or a cause of, the latter; and it is to overcome this that I especially direct attention; but it will suffice if I show that that early condition is a necessary antecedent to tubercle, without being called upon to prove that it is a cause of tubercle, or that tubercle is its necessary consequent. I consider that this connexion is proved from its own evidences absolutely, and from those contrasted with the evidence which tubercle in its very early condition affords. Its own evidences are shorter breathing, less breath motion, feeble and shorter inspiratory sounds and particularly the vesicular sounds, and this may be more or less general over the whole of both lungs. Expiration quick, forcible, and perfect. Deep inspiration may be effected, but it is not effected by the patient unless at least his attention be directed to the defect, and more commonly not until he has given attention by repeated efforts. This may be readily proved by the inspiration. The quantity of tidal air is often diminished in ordinary breathing. The general indications of body will be those of atonicity, and possibly the rate of pulsation and respiration will be increased, and the complexion and condition of system evince a state of mal-nutrition. There will probably be flattening of the chest, depending upon original conformation or upon the progress of the disease. The same remark will also apply to dulness on percussion. Cough may or may not exist, as also some hemoptysis. The essence of the whole is less respiratory action; and as this varies in degree, extent, and duration, so will the other signs vary.

"The evidences of the disease when tubercle is deposited in its very early period, are the same, but with the addition of those of the existence of obstruction at certain defined places. Hitherto there was lessened action, but no localised obstruction, but the deposit of a matter more or less solid offers obstruction to the entrance and exit of the air in the precise spot in which it is placed, and then by extension as the quantity increases. This is evinced by wavy or jerking respiration and prolonged expiration. In addition, the new

substance will displace a quantity of air, and then, by its own heavier specific gravity, cause the resonance on percussion to be less clear.

"Thus the essential difference in the two stages is, that in the first we meet with simply lessened action and its consequences, whilst in the second there is added obstruction and solidification; and these signs are sufficiently diagnostic, except perhaps at that short period when the two meet, or the first passes into the second stage."

After enumerating the many causes which may possibly operate in producing a shortened respiration, the author strikes out such of them as are not known to have a general action, and reduces the category to three, viz., lessened muscular effort; lessened capability of expansion in the air-cells; and lessened call for air. The second of these is not induced until after tubercular deposition has continued for some time; the last can only be inferred from the diminished quantity inspired, and yet not inducing dyspnœa; while the remaining, that is, lessened muscular effort, whether arising from diminution of cerebro-spinal power, or an atonic state of the tissue, is considered as the most probable cause of general application. In the large number of observations which the author has made concerning the phenomena accompanying the respiratory movements, their strength, duration, difficulty, or other circumstances, it would appear that his attention has not been much directed to an investigation of the real value of a sign of phthisis, which of late years has been much written and talked about, namely, a marked difference in the comparative duration of inspiration and expiration. The circumstance, however, has not escaped his notice altogether; and in the following extract it will be seen that he has made some observations bearing upon this question, which are of practical importance. In speaking of the movements of the chest he says:—

"But besides the localised deficiency in movement, there is a general deficiency in the earlier stage, and a further irregularity which is worthy of notice. In the earlier stage, it is of common occurrence to find a want of correspondence between the apparent effort and duration of inspiration and the extent and duration of the inspiratory movements; so that the patient, when directed to deeply inspire, appears to be and believes himself to be inspiring when, in fact, the movement of the chest and further introduction of air have both ceased. This is remarkable, and of daily observation, and with it we usually find a short and snatching inspiration. The power of expiration is perfect—short, quick, and forcible—and often seems to have obtained the muscular effort which the patient has lost in reference to inspiration; but at the same time there is in some persons a disposition to retain a larger quantity of air that is natural under the

circumstances, and thus to lessen the depth of the succeeding inspiration. These irregularities are so marked and frequent amongst my out-patients at the hospital, that the thought is impressed upon the mind that men and women need to be taught how to breathe. In such cases, if we ask for a deep breath we obtain a short and feeble inspiratory effort, and then a sudden forcible and complete expiratory one, and if the act is repeated frequently the length of the expiratory act is lessened, but its rapidity and force are maintained. The aim of the patient seems to be to empty and not to fill the lungs; and it is only by making this apparent to him, and enforcing it by an illustration in my own person, that he comprehends the error, and after that it is often impossible to induce him to take the deep inspiration which he ought to take. The importance of this error is very great, since it tends directly to prevent due expansion of the lungs, and to induce a train of consecutive evils.

"Now, to what is this state to be attributed? It is not to obstruction within the chest by any deposited substance, since it occurs when there is no deposit, as also when the deposit is inconsiderable, and, it may be, is restricted to one lung alone. When it occurs with extensive deposit it is less remarkable, and I believe it to be less frequent under these conditions. The two most patent causes are deficient muscular action and closure of the trachea. The former may simply result from the general atonic state of system with which it is commonly associated; but it is, I am convinced, due often to a condition of some of the muscles, which orthopædic surgeons have of late frequently regarded as paralysis, but I think without sufficient reason. The special muscular power exerted in inspiration is proportionately less than the power of other muscles in the body. It is not that the walls of the chest are less mobile; for, on the contrary, the tonicity of the ligaments and the cartilages is, perhaps, lessened, and, therefore, their resistance is decreased. Hence they would move if the motive power were adequate. This is also capable of proof from the fact that by more attention and effort on the part of the patient, the inspiratory movement does increase. The involuntary closure of the trachea, such as occurs on coughing or when we use much effort, as in lifting burdens, and as we are able to induce voluntarily at any moment, is, I am convinced, of very frequent occurrence. The patient, in obeying directions to take in a deep breath, snatches a breath and the effort stops suddenly, and at the same time there is a motion about the larynx which attracts attention. It almost always occurs that he breathes through the nose, and when directed to breathe through the mouth, and with an open throat, and to feel the air passing down the throat, he is enabled to increase considerably the volume of air which he inhales. This is most readily obvious when using my spirometer to determine the total vital capacity, and then it is not infrequent to obtain an addition of thirty cubic inches to the quantity previously breathed. This obstruction is, therefore, an involuntary act, but one which volition can overcome; but although it may be overcome by practice, it seems

to be an almost insuperable difficulty at the first. It is one of the greatest obstacles to free inspiration with which I have to contend; but yet one which, whilst it has led to much injury to the system, offers much more hope and encouragement in the treatment of the disease than would be the case if the existing degree of inaction were entirely due to internal deposit. It is a bad habit resulting from deficient muscular power, and is not infrequent in states of chronic debility from other diseases."

The various conditions of the throat met with in phthisis are well described, the principal of these being three in number. The first, and most common, is merely a state of great pallor, with absorption of fat, atrophy of the anterior, and undue prominence of the posterior arch of the palate. The second form is characterized by enlarged mucous follicles upon the uvula and the posterior wall of the pharynx; and the third exhibits a state of desquamation, with effusion of lymph upon the pharynx, and general vascular congestion. These several forms of diseased appearances are well shown in the coloured plate which accompanies the description.

We are inclined to think the author has treated the subject of indigestion too lightly, dismissing it with the following few observations; in fact we have long since learned by experience to regard the early appearance of dyspepsia as a matter of most serious import, and one which too often appears to give the first impetus to the development of a phthisical degeneracy of the system. He says:—

"*Indigestion.*—Indigestion is often present in the long course of so chronic a disease, but it is not a necessary cause or consequence. It is, moreover, usually amenable to treatment; but yet it oftentimes requires attention. It is commonly associated with a sense of weight or tenderness over the region of the liver on both sides, and indeed this latter occurrence attracts more attention than the former. The condition of the liver is one of lessened action, perhaps, but certainly one of congestion, and it is due doubtless to the interference of the pulmonic circulation which necessarily occurs in the disease. In like manner there is commonly some disposition to deficient action in the bowels, due partly to the same cause, as evinced by the occurrence of hemorrhoids, and subsequently of purulent collections about the rectum. The state of the stomach, liver, and bowels, requires inquiry and relief, since it is so constantly associated with conditions of the throat, and is apt to react in other ways upon the general system; but the continuance of a sufficiently good appetite is the best proof that this state is not constant, and does not seriously interfere with the constitution of the body. It is, however, so frequently associated with other evils in a long course of disease, that the physician should have it continually in his view."

The following remarks on the rate of pulsation and respiration are too concise to admit of condensation: they will, however, be read with interest:—

"The rate of pulsation and respiration in phthisis is most variable. In the inquiry before referred to, I found that that of the former varied from 55 to 166, and of the latter from 11 to 43, per minute; and that the total average of 3,000 observations in all stages combined, was 95·3 pulsations, and 23 respirations, per minute. In one-third of the cases there was a total average pulsation under 90 per minute, and in only one-third did it exceed 100 per minute on the total average; whilst in one case, with phthisis of both lungs, and also with Bright's disease, the total average was 76·1 pulsation per minute. The highest monthly average recorded was 128·4 per minute. The highest average rate of respiration was 31, and the lowest 16 per minute (Diagram iv. and the 'British and Foreign Med.-Chirurg. Review,' April, 1856).

"The ratio of the two functions was also equally variable. In individual instances it was as low as 1 to 9. The ratio of the total averages varied from as 1 to 3·3 to as 1 to 6·2, and even in the same case the ratio varied with the day and night from as 1 to 2·8 to as 1 to 5·1. In a woman, the ratio at 1 and 3 A.M. was found so high on the average as 1 to 1·4 (Diagram ii. and the 'Transac. of the Roy. Medical Society,' 1856).

"Hence, increased rapidity of both functions is commonly associated with phthisis, but, except at the last periods, it is not invariably present. In the advanced cases there was found not only increased frequency, but greater variation in the rate, and also greater excitability of system. There was a *general* relationship between frequency of respiration and extent of disease, frequency of pulsation, short stature, lessened vital capacity, and excitable temperament. Posture was powerful in modifying the rate in phthisis; so that there was an extreme excess in one day of 29 pulsations in the sitting over the lying posture, 32 pulsations in the standing over the sitting, and 44 pulsations in the standing over the lying posture. The total extremes recorded were—lying, 55 and 138; sitting, 62 and 150; and standing, 75 and 166; whilst the total average was a difference of 10 pulsations between each of the postures in the morning, and 7 in the evening, or a total of 20 pulsations between lying and standing in the morning, and 14 at 4 P.M. (Diagram iv.). Increase in the rate of pulsation, from posture, is not invariable, but in one-fifth of the whole observations there was an increase in the sitting over the lying, and in 237 of 502 observations, there was an increase in the standing over the sitting posture. The total average showed an increase of 1 per minute in the sitting, and 1·4 per minute in the standing posture.

"The influence of day and night is very great, but during each of these periods separately, there was much uniformity (Diagrams ii. and iii.). The periods of change were the morning from 5 to 10

o'clock, and in the evening from 9 P. M. to 1 A. M.; and the total average of the increase was 27 pulsations in the former, and the decrease 19 pulsations in the latter. In isolated instances the increase of the day over the night was upwards of 40 pulsations per minute. The low pulsation of the night was due to, first, posture of body which has been given above; second, darkness, about 10 pulsations; and, third, sleep, from 5 to 10 pulsations on the average. The higher pulsation of the day was associated with, first, waking from sleep, 5 to 10 pulsations; second, sunlight, 10 pulsations; third, food, viz., breakfast, 10 pulsations; dinner, 11 pulsations; tea, 7 pulsations; and supper, $2\frac{1}{2}$ pulsations: fourth, exercise and mental actions and emotions. The influence upon the rate of respiration was in some respects different from that in the rate of pulsation. The total rate was higher in the night than in the day. This was associated with sleep, and so great was the influence, that with the first hour of sleep there was often an increase of 10 or 12 pulsations per minute, and with the first hour of waking in the morning there was a total average diminution of 13 respirations per minute. The lowest rate of the 24 hours was observed at the time of waking in the morning, and before food had been taken. Sunlight appears to have no influence over the rate of respiration; but temperature, in the long period of one month, greatly increased the rate of pulsation, and lessened that of respiration. With this increased temperature was also commonly associated increased dryness of the air, and hence both causes might have operated to produce the opposite effects just mentioned. Food increases the rate of respiration to the extent of $2\frac{1}{4}$ respirations after breakfast, 3 after dinner, and $1\frac{1}{2}$ after tea; but the effect of supper was too frequently null to be estimated by averages.

"Hence, in estimating the rate of pulsation and respiration in phthisis, we must have regard to the following circumstances: age and sex, stature, temperament, extent and stage of the disease, posture of body, exercise, wakefulness, sleep, sunlight, darkness, temperature, humidity, and food."

At the end of the book the reader will find three very ingenious and comprehensive diagrams in illustration of this subject, the first two of which have already appeared in the twenty-ninth volume of the Medico-Chirurgical Transactions. The first (Diagram II.) exhibits to the eye at one view the rates of pulsation and respiration in the quiet lying posture, in three male patients affected with phthisis, at every hour during six days and nights; each case being represented by a wavy or curved line, which in the upper part of the diagram represents the pulse, in the lower the respiration. The following circumstances are thus made evident, viz.:—1. The high rate of pulsation during the day as compared with the night, the great variations due to food, and the morning ascent and the

evening descent. 2. The higher rate of respiration in the night than during the day, with the sudden increase of the rate at the first hour of sleep, which is particularly evident in one of the cases. 3. Sleep increases the rate of respiration, and lessens that of pulsation. In a few instances this may be seen in the diagram in reference to day sleep.

The second of these plates (Diagram III.) shows the *hourly* variations in the rate of pulsation and respiration in each of six phthisical patients, and in all combined, deduced from previous inquiry. There is a feature in both these diagrams, which, by the way, we do not quite comprehend, namely, that the dark or shaded space representing the hours of darkness, extends invariably *further* on the *morning* side of the line of midnight than on the evening side of the same line. Thus, for example, on the 12th June (Diagram II.) the darkness is represented as extending from 10 P. M. till 4 A. M., which is at variance with all our almanacs.

We turn now to the *second part* of the treatise, containing the general principles of treatment. Looking upon diminished respiration as the essential feature of the disease under consideration, the author earnestly calls attention to the first or pre-tubercular stage, "since in that, and in no other, we have every physiological reason for believing that our efforts may be effectually and rationally made."

The essential treatment, therefore, consists in augmenting the respiration, which may be effected and promoted by many aids. The remarks which the author makes upon such practical measures as are suggested by the above view of the nature of the disease—for example, *voluntary*, deep inspirations at certain convenient intervals, the various kinds of bodily exercise in the open air, the application of cold externally, &c.—are highly judicious, and deserve to be read attentively. Upon these we shall not now dwell, but will bring our notice of a thoroughly practical and useful little volume to a close, by quoting the paragraph with which the essay concludes:—

"In bringing this paper to a close, I feel it to be scarcely necessary to call attention to the removal of whatever conditions may have given rise, or have tended to give rise, to the disease: such, for example, as deficient food or clothing, anxiety, excessive or defective bodily exertion, abuse, occupation, residence, and impure air; since it is evident that to remove an effect implies, at least, the removal of the cause. But I would venture very earnestly to ask the attention of my professional brethren to two circumstances: First, to appreciate fully the existence of a pre-tubercular stage, and its importance as the only period for successful treatment; feeling assured

that this is a first and a necessary step to a better acquaintance with the subject by the public in general and to the application for medical aid under these favourable circumstances. It would also give a definite view to the treatment adopted with feeble youths of both sexes, with a view to improve their general health, and be a measure of the importance and progress of the case; and, second, to believe, and to induce the public to believe, that, fatal and prevalent as the disease is, it is one *largely capable of prevention.* May the period yet arrive when, whilst retaining the many advantages of our day, we shall in no small degree exchange our enervating brain-working and money-seeking habits for some of the breath-exciting practices and rustic simplicity of times not yet out of memory."

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*The Ophthalmoscope; its Mode of Application explained, and its Value shown, in the Exploration of internal Diseases affecting the Eye.* By Jabez Hogg. London: Churchill. 1858. 8vo, pp. 107.

Mr. Hogg is already favourably known as a writer by his very useful monograph on the Microscope. In the volume before us he enters into the history of the invention of the ophthalmoscope, and claims for Mr. Cumming, an English surgeon, the honour of having "pointed out the existence of a reflection from the back of the human eye, and distinctly recognised the significance of the discovery."

The contents of the book have been already given to the profession in the pages of The Lancet, and the author's apology for their reappearance in the present form is, that he believes, "the instrument is destined to open out a new era in ophthalmic medicine." It is not our intention to enter into a minute analysis of the work, but to extract cases and passages from it, and make a few observations thereon. We fully agree with Mr. Hogg, that correct diagnosis is the secret of success in the treatment of diseases of the eye; but we cannot accord to the ophthalmoscope the amount of value attached to it by the author and by many other London surgeons, while we are convinced of this,—that the indiscriminate use of it in every case of that ambiguous disease termed "incipient amaurosis" is fraught with danger to the patient, and may be attended with loss of reputation to the surgeon. We are also sure that nearly all the curable affections of the internal structures of the eye may be diagnosed with far greater safety to the patient, with the eye aided by a compound glass of about one inch focus[a].

[a] Those made by Hawes, London, we prefer.

That several of Mr. Hogg's recorded cases were quite capable of diagnosis by the symptoms presented, without the aid of the ophthalmoscope, and were treated entirely from a knowledge of these symptoms, and not from the diseased appearances discovered by this instrument, we shall now endeavour to prove. A case of "nyctalopia—day blindness, with floating masses in vitreous," is detailed.

A sailor, aged 46, while serving in the Crimea, was exposed to very great hardships; the combined effects of bad food, cold winds, hail, and working for three weeks in the glare of the snow, are followed by epistaxis, which lasted for five hours; four days afterwards his eyes became inflamed and ran water, which continued for three weeks, "during which time he found he could only see about nightfall." For this he is bled, cupped, and blistered, which, he states, weakened him very much; afterwards he was removed to the hospital at Constantinople, where a tonic plan of treatment was prescribed, and he was sent home to England. He then applied to Mr. Hogg, who examined his eyes with the ophthalmoscope, and we have the following report:—"Lenses perfectly clear, retinoid vessels large, numerous, and distinctly seen; over papilla optica a bluish patch, and a general grayish appearance of the *optic nerve!* the fundus has a curious mottled appearance, rather dark in colour, like pigmental masses seen through a red gauze. One spot, larger and darker, fixed near the inner side of the optic nerve. Many floating specks of a dark gray colour. External vessels of conjunctiva rather larger and more numerous than in normal state. Continuously looking on the snow, he was told, brought on the first attack of inflammation." We are at a loss to know why the last two sentences are given as part of the ophthalmoscopic examination.

The writer adds:—"My patient was pale and weak, and I considered the administration of tonics would give him the best chance of recovery. Mist. Ferri Co. was prescribed three times a day;" after the long-continued use of which, we are told, "he said he could just make out persons passing before him by daylight, and had great hopes of regaining sufficient sight to go about alone." May we ask, of what use in this case was the ophthalmoscopic examination?—did it throw any light upon the affection under which he laboured? Were not the indications for treatment plain and evident? and to the continual action of a cessation of hardships, change of air, improved general health, and the persistence in the tonic treatment (previously prescribed), must the slight change for the better

in his vision be solely attributed, and not to any supposed knowledge gained by the use of the ophthalmoscope.

The next case is still more striking; it is entitled, "Hemiopia, with masses fixed and floating." The principal symptoms are thus given:—"Now troubled very much with small bright stars floating in both eyes, and has side vision only in left eye; first and second molar teeth in upper jaw much decayed and often troublesome (!), with headach." "Mydriasis partial" is given under the head of "examined by the ophthalmoscope," which certainly might be seen without its aid.

Here is a case of partial amaurosis, the history of which is very imperfectly given. The writer says:—"Six years since the right eye became impaired (?), and subsequently the left eye was affected in the *same* way" (how ?). We think, from the fact of the patient being an engineer and working a great deal by gas-light, and the symptoms above detailed, there was sufficient evidence that the cause of the amaurosis was retinitis, which should have deterred a surgeon from the uncalled-for use of the ophthalmoscope in this case. Our space will not permit us to comment on more than two other cases,—one given on the authority of Dr. Anagnostakis, entitled, "Amblyopia, with floating bodies in vitreous," which seems to us to be nothing more or less than a case of "accidentally discovered amaurosis;" an affection to which Mr. Wilde drew the attention of the profession some years ago. In this case the defect of vision was only discovered by the patient "when, by chance on closing his left eye, he perceived that he was deprived of sight in his right, and from that time he saw cobwebs before his eye." The other case is thus described:—"The patient was saved a needless operation, which had been recommended for the restoration of her sight. Mary F—— came to London for the purpose of submitting to the operation for a supposed cataract." Does Mr. Hogg mean us to believe that either he or any other of the London oculists requires the aid of this vaunted instrument to diagnose the existence of a cataract, more especially one about to be submitted to an operation?

We confess that it is very satisfactory to be able to diagnose the presence of hydatids in the vitreous humor, as was done in the case related by Dr. A. Von Graeffe, in which he endeavoured to fish out a cysticercus through an incision in the sclerotic, and finally succeeded "after several attempts," and having left the greater portion of the cyst behind. The result is thus detailed:—"Chronic choroiditis is apprehended." Surely, "the last state of that man was worse than the first." We feel con-

fident that no English surgeon will imitate the learned surgeon's piscatory operation.

A great deal of the book is taken up with the subject of "glaucoma." Copious extracts from the recent papers by Graeffe, Rosas, Bowman, Hulke, and others, upon the pathology of this disease, are given; and the author concludes an able discussion on the subject by the following sensible remarks in reference to Dr. Graeffe's operation:—"From the few cases which have fallen under my own observation, I must say, that I am not so sanguine of the ultimate value of this operation; nor do I think, before a year or two shall have passed over, that the success of the operative procedure will be established; I fear, in these cases the disease will return, and the disorganization proceed to destruction of vision." We go even further than this: we deny the use of excising three-fourths of the iris in this disease, and in this belief we are strengthened by the opinion of many able surgeons, both on this and the other side of the channel: time will prove this opinion to be correct.

The remainder of the book is taken up with numerous cases of amaurosis, and the ophthalmoscopic appearances detailed. We regret, however, that they do not seem to afford much additional information either on the diagnosis or treatment of this obscure affection.

Many of the cases are illustrated by well-executed lithographs of the morbid appearances of the retina.

In conclusion, although we differ from Mr. Hogg in many of his opinions, yet he deserves much credit for the amount of ability and research he has shown in the compilation of his book, which will, undoubtedly, repay a perusal by those who take an interest in ophthalmic medicine and surgery.

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*The Phenomena of Spinal Irritation, and other functional Diseases of the Nervous System explained; and a rational Plan of Treatment deduced.* By THOMAS INMAN, M. D., Lecturer on the Principles and Practice of Medicine at the Liverpool Royal Infirmary School of Medicine; Physician to the Northern Hospital, &c. &c. London: Churchill. 1858. 8vo, pp. 201.

ACCORDING to the author, this volume really is "a treatise on muscular affections, and their bearings upon nervous disorders." These muscular affections are those which in a healthy individual are included under the terms cramp, spasm, stiffness, soreness or aching: in the invalid they are generally called pains.

The locality of these affections varies; they may attack the trunk or extremities—the former, Dr. Inman thinks, more frequently than the latter; and the tendinous parts more frequently than the fleshy. That these pains in certain localities are not unfrequently mistaken for evidences of organic disease, most of us know by experience; and it is, therefore, of consequence to point out the diagnostic marks by which they may be distinguished. According to the author, these muscular pains are almost always described as hot or burning; they are absent in the morning on rising, but go on increasing until bed-time; the pain is aggravated by bringing the muscle of the locality where the pain is felt into action; at first the pain is relieved by the pressure of the hand, but afterwards the parts become tender; the pain can be traced to unusual exertion in a strong person, or to a weak muscle having to do the work of a strong one: the pain is relieved by relaxation or artificial support: the pulse is always unaffected: the patient marks out involuntarily the muscle affected; and lastly, the pain of cramp comes on suddenly.

As the author has fully shown by well selected cases, a great variety of voluntary muscles are liable to this affection, and this chapter, and the next on the causes which predispose to muscular affections, will amply repay perusal. A very interesting inquiry is—"whether the involuntary muscles, and especially the heart, are liable to these cramps and pains from over-exertion." Dr. Inman concludes that the heart is not exempt from such affections; and that, when there is organic disease, they may tell with fatal effect. He believes—

"1. That, so long as the constitution is sound, and the muscular system in good condition, disease of the heart may be compatible with tolerable health. 2. That when the heart is diseased, and the person debilitated, death may be sudden, or otherwise, according to the work the heart has to do: when the heart is much enfeebled, the task of driving the blood to the head in an erect posture may be too much for its powers. 3. That the proper treatment is rest and quiet, as far as possible, the removal of obstructions, and the administration of such tonics as are available. In a great number of instances I have found rest and adequate nutrition alone suffice for (relative) cure."

There can be no doubt that many cases of sudden death are due to spasmodic affections of the heart, whether there be organic disease of the valves or not.

Now, what relation have these muscular affections to the so-called "spinal irritation," to which they are so commonly attributed? After a careful examination of the phenomena of spi-

nal irritation, as laid down by the best writers, Dr. Inman concludes—

"That the vast majority of the symptoms considered the result of spinal irritation, arise from over-exertion of one or more portions of the muscular system in debilitated subjects. That spinal tenderness has a similar origin. That the other symptoms, commonly considered as *resulting* from spinal tenderness, are *concomitants only*, and referable to a common cause."

Further, he considers that the weaker an individual is, the greater is the tendency to fibrous pain, and that debility increases equally the irritability of the muscular and nervous systems; and that hysteria consists essentially in increased irritability of the nervous and muscular systems, or both, arising from debility. The essential distinction between these hysterical and muscular affections is, that a large amount of bodily rest is necessary for the cure of the latter, while it is not so requisite for the former.

Having thus briefly noticed the character of the pain, its localities, and its relation with spinal irritation and hysteria, we shall proceed to give the author's indications of treatment:—

"1. For immediate relief the muscles must have rest or some artificial support, such as a bandage, elastic or otherwise, strapping, and the like.

"2. For a permanent cure, the whole system must be strengthened, and, where it agrees, there is no medicine which fulfils this indication like cod-liver oil, with or without tincture of iron, in full doses.

"3. When the cramps are severe, morphia internally and externally is of the greatest benefit. Forcible extension of the affected muscles gives almost immediate relief, if the cramp is recent.

"4. Galvanism is sometimes of service in restoring 'tone;' friction does little good; shampooing relieves, but rarely cures: strychnine is too slow in its operation to be trusted to.

"5. Exercise is of no use unless combined with fresh air, generous diet, and such medicines as tend to improve the digestive powers; for though exercise improves the muscles in the country, yet it commonly debilitates in a town like Liverpool.

"6. Local depletion, blisters, or sinapisms, very rarely, if ever, give relief: if they do it is only temporary, and the next attack is more severe; the exception is when the spasmodic condition is permanent."

There are many more dangerous diseases than these muscular affections, few that are more common, and, we might add, more troublesome; and if the man who should discover a cure for a 'common cold' is to be considered a great public benefactor, so in a lesser sense may he who shall effectually control and remove these muscular pains and cramps.

We think that Dr. Inman deserves the gratitude of the profession for the trouble he has taken, and we shall be much surprised if he do not obtain something more than thanks in a town like Liverpool. The book is very nicely got up, and the different points have been elaborated in a way to which our condensed resumé does no adequate justice. Moreover every step in this investigation is illustrated by cases in point, of great interest, and very well related.

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*Epilepsy, and other Convulsive Affections: their Pathology and Treatment.* By Charles B. Radcliffe, M. D., Physician to the Westminster Hospital, &c. Second Edition, revised and enlarged. London: Churchill. 1858. Post 8vo, pp. 383.

This is a most remarkable book—one with a lofty ambition too, no less than to overturn all our hitherto received ideas on the physiology of muscular motion, and to erect a new theory, whereon to found a pathology of the class of convulsive diseases. The work consists of two parts, essentially distinct, but illustrating one another: the first is an inquiry into the physiology of muscular motion; the second is on the pathology and treatment of the diseases named in the title. It is left to the option of any one who may so choose to read the practical portion first; and then turn back and see how far the conclusions to which he is conducted by arguments of a purely pathological character—arguments which are complete in themselves—are borne out by the physiology of muscular motion. We shall follow the order in which the subject is discussed by the author, for we believe, with him, that "a sound physiology must go before a sound pathology." We must observe here, that in treating of epilepsy and other convulsive affections, the author does not propose to himself to enter into every part of the subject; on the contrary, he says he passes by several topics of considerable interest in themselves, but only of secondary importance in the argument, because he does not wish to divert attention from the object he has in view, which is to point out the necessity for a fundamental change in the pathology and treatment of the disorders under consideration, and a change which is in accordance with that which would seem to be demanded in the physiology of muscular motion.

The great object of the book is to prove that "muscle contracts, not because it is stimulated to contract by nervous influence, or electricity, or any other so-called stimulus of con-

traction, but because something has been withdrawn from the muscle which previously prevented the free action of common molecular contraction." Professor Engel of Zurich, Matteucci of Pisa, and Stannius of Rostock, are claimed by the author as having advocated a similar view, either before or since he first wrote upon the subject. This theory, implying, as it does, that the muscles have a constant tendency to undergo contraction in consequence of the operation of certain common physical molecular forces, and are only prevented from contraction by the operation of certain other forces (electrical or nervous), on the withdrawal of whose influence the molecular force manifests itself, will be at once seen to be directly at variance with the recognised opinion, which is stated in a footnote to be, "that muscle is endowed with a vital property of contractility, and that muscular contraction is brought about when this property is called into action by certain agents, such as electricity or nervous influence. It is supposed, indeed, that this vital property of contractility is roused or excited, or *stimulated*, into a state of action when the muscle contracts, and hence the agents which thus rouse, or excite, or stimulate, are called stimuli." The application of this doctrine to the pathology and treatment of the class of diseases under consideration is, that as muscular motion is the result of the withdrawal of certain influences, and that as these diseases are characterized by excessive and irregular movements, the indication of treatment is for stimulants and tonics, whereby to increase the powers which counteract and prevent muscular contractions and movements. The reasoning by which this argument is supported is very ingenious, but fails to convince us; however, we would recommend our readers to judge for themselves. This we feel bound to say, that the perusal of the book has afforded us much pleasure.

In treating of the physiology of muscular motion, Dr. Radcliffe endeavours to establish the three following propositions:—

"1st. That muscular contraction is *not* produced by the stimulation of any property of contractility belonging to muscle."

"2nd. That muscular *elongation* (the term elongation is used in preference to the term relaxation, for reasons which will appear in the sequel) is produced by the simple physical action of certain agents, electricity and others, and that muscular contraction is the simple physical consequence of the cessation of this action."

"3rd. That the special muscular movements which are concerned in the carrying on the circulation—the rhythm of the heart, and the movements of the vessels that are independent of the heart—are susceptible of a physical explanation, when they are interpreted on this view of muscular action."

These propositions are considered in detail. Under the first we have the action of the various stimuli to contraction, as ordinarily stated, inquired into, viz., electricity, nervous influence, the blood, mechanical agents, light, heat or cold, and chemical agents; and the conclusion arrived at is, that these agents all cause relaxation, or, we should say, *elongation*, of muscles rather than contraction, as ordinarily supposed. To illustrate the operation of electricity, reference is made to the researches of Galvani, Volta, Humboldt, Matteucci, and Dr. Du Bois Reymond. These experimentalists, more especially the last two, have, as is well known, proved that muscles when in a state of rest have an electric current passing through them, not in any specific direction, but in some from the origin towards the insertion, and in others in the opposite direction. The current, moreover, is not fixed in its course, inasmuch as turning the muscle makes it set in a contrary direction. It appears, too, from the experiments of Dr. Du Bois Raymond, confirmed by those of the author, that this muscular current is weakened while the muscle is in a state of contraction, and that it is most active when the "irritability" of the muscle is most perfect; and that it fails *pari passu* with this "irritability," it being found to have died out altogether when the muscle has passed into the state of rigor mortis. This current our author believes to keep the muscle in a state of *elongation* by counteracting the tendency to molecular contraction, but on this we must let him speak for himself:—

"On turning from these considerations to those which concern the action of the ordinary galvanic current upon muscle, it is to be expected that the existence of the muscular current is not to be ignored. And further, it is to be expected that certain reactions between the two currents will arise out of the particular course of the muscular current. . . . . Now, if such be the course of the muscular current, it is evident, first of all, that there is no way of passing the galvanic current through a muscular fibre, in which this current will not cross the course of the muscular current. . . . . And if the two currents cross in this manner, then must they clash; and (to an equivalent degree) neutralize each other. In a word, it is not enough to regard the muscle as a simple conductor, through which the galvanic current has to pass and take possession, but it is necessary to regard it as the seat of a current which must be over-

come before the galvanic current can pass and gain possession. Nor is it not enough to say that the muscular current returns when the galvanic current is suspended. The muscular current does return at this time—of this there can be no doubt—but there is also another current which springs into existence at the same time, and this is the ordinary reverse current which arises out of the secondary polarity of some part of the circuit. Just then, as the muscle could not be looked on as a simple conductor at the moment when the primary galvanic current began to pass, so now it cannot be looked upon as a simple conductor at the moment when the muscular current returns to the muscle—for, before the muscular current can regain possession of the muscle, it must contend with and overcome the reverse current above mentioned. It is evident, indeed, that there will be a clashing and equivalent neutralization between the muscular current and the reverse galvanic current at the moment when the circuit is opened, which is in every respect similar to that clashing and neutralization that took place between the muscular and primary galvanic current at the moment when the circuit is closed; and hence a moment in which electrical action is neutralized—*a moment of inaction*, as it may be called—may be supposed to precede both the establishment of the galvanic current and the return of the muscular current.

"What, then, it now remains to ask, are the phenomena which attend on the passage of the galvanic current through the muscle, and how are they to be accounted for? The principal fact is, that a muscle contracts when the circuit is closed, and when the circuit is opened, but not during the time that the current is passing through it. . . . . In this experiment (one of Matteucci's) it was also found that the contraction on opening the circuit was less marked than on closing the circuit; that both contractions became progressively less and less marked until they ceased altogether; and that one or both of the contractions might be revived for a short time after their extinction by increasing the strength of the current.

"Now, in seeking for the explanation of these phenomena it is difficult, if not impossible, to find any reason for supposing that the contractions are due to any direct action of the current, natural or artificial. For, what is the case? The case is, that the muscle does not contract so long as the galvanic current continues to pass through it. The case is, that the muscle does not contract so long as it is left to the undisturbed possession of the muscular current. But, on the other hand, there is no difficulty in connecting the contractions with that clashing and neutralization of the muscular and artificial current, direct or reverse, of which mention has been made, as attending upon the commencement and cessation of the passage of the artificial current through the muscle. For if contraction is absent when the artificial or natural current is manifestly present, and if contraction is present when the artificial or natural current is manifestly absent, then there appears to be only one course open,

and that is to connect the contraction with the absence of the current."

The fact that the contractions become less marked as an experiment on a muscle proceeds, and that the contraction on opening the circuit is less marked than that on closing it, the author explains as arising in consequence of the diminution of the muscular current; for, to weaken this current is to diminish those neutralizing reactions between the two currents which, upon his view, are directly measured by the degree of the contraction. The reproduction of the contractions after they had once ceased, by increasing the strength of the artificial current, he attributes to this acting more deeply on the muscle and reaching fibres, unaffected by the weaker current. The hardness of muscle, in its contracted state, cannot, he says, be adduced as an objection to this view, because it has been shown by Professor E. Weber this depends on the straining of the muscle on its attachments, and when it is separated from these, it is, he says, actually softer than in its uncontracted state.

We cannot but think that the author acted wisely in placing this illustration of his theory in the foremost rank, for it is well calculated to create a good impression; and by offering a specious explanation of facts not hitherto explained, it inclines the reader to give a favourable reception to what is to follow. However, we would remind our readers of the assertion made by Hugh Miller (Testimony of the Rocks), that when a plain "common sense-like" explanation is offered of physical phenomena, it is to be received with caution, as being most likely to prove erroneous. Without, however, going so far in the present instance, we would remark that certain of the phenomena now alluded to admit of a different explanation ftom that offered by this theory, and that as the theory does not accord with many other facts, its explanation of the phenomena hitherto unexplained must be rejected; and we must remain in our ignorance yet a little longer. The electric current circulating in muscles at rest, we regard as the result of the chemical changes occurring in the process of the waste and repair of the muscular tissue; chemical affinity set free in the disintegration of the tissue is "correlated" into electricity, to be reabsorbed probably in the process of repair. Muscular contraction leads to and necessitates disintegration; but during the act of contraction this process and the consequent repair are not taking place: and therefore we believe it is that the muscular current is at this time weakened. Of the other facts under discussion, the oc-

currence of contraction in muscles at the making or breaking of the galvanic current only, and its absence during the continuance of it, we have no explanation to offer; but, for the reason above stated, that it does not accord with other established facts, we cannot receive Dr. Radcliffe's theory.

We have next to consider the effect of "nervous influence," Dr. Radcliffe asserting that muscular contraction is not produced by the stimulation of nervous influence. This is first investigated from an electrical point of view:—

"'Nervous influence' is a convenient term which includes more agencies than one. It includes certain agencies which are thought to be vital, and it includes other agencies which come within the scope of physical inquiry. It is not necessary, however, to determine how much is vital and how much is physical, for if one thing is more probable than another, it is that there is one common force underlying all agents, vital and physical, and that the differences of agency are owing, not to the difference of force, but simply to the difference of circumstances in which one and the same force is manifested. Now of the several agencies included in the term nervous influence, electricity is the one which is most easily investigated, and hence we will begin to interpret the mode in which muscle is affected by nervous influence from an electrical point of view."

Here we must protest against this confounding of nervous influence and electricity. That they are analogous,—nay, that they are different manifestations of the same force, may be quite true, and we believe it is; but the circumstances under which they are manifested are so different that it has always been a fertile source of error to apply the laws deduced from the operations of the one to the elucidation of the other.

The experiments of Du Bois Raymond have demonstrated that a current analogous to that met with in muscles, and obeying the same laws, exists in nerves; and that, like the muscular current, it is enfeebled during muscular contraction, and dies out with the irritability of the muscles, but differs from the muscular current in being more constant in its direction,—in the undisturbed condition of the parts, passing almost constantly in a direction from the toes towards the head. This fixity of the direction of the nerve current seems to us to indicate that it is derived from the electricity generated in the muscles by the peculiar changes going on in them; but the author seems to regard it as one of the special provisions for preventing the manifestation of the molecular force of attraction in the muscles. The effect of setting up a galvanic current in a whole nerve, or even in a short length of a nerve, is to cause a current to pass in an opposite direction to this nerve-

current, or, if the galvanic current be very weak, to at least weaken the nerve-current. Certain reactions then take place between the natural current and the artificial, and, as in the case of the muscles, a similar clashing and neutralization occur, producing periods of inaction, during which muscular contraction is effected in consequence of the molecular forces being unopposed. It having been shown that the effect of making and breaking the circuit resembles that found in muscles, the author proceeds:—

"Looking at muscular action, then, in relation to the electrical changes of the nerves concerned in this action, it would appear that muscular elongation is coincident with the *action* of natural or artificial electricity on the nerve, and that muscular contraction is connected in some way with the diminution or annihilation of this action; and no reason has yet arisen which can support the idea that any vital property of nerve has been called into active exercise during the time of contraction by the stimulus of electricity."

We have it next asserted that there is little reason to believe that muscular contraction is produced by any stimulation derived from the nervous centres, and certain facts are adduced as evidence of this. Here, however, we believe that the author fails utterly in proving his case. The experiments alluded to prove admirably that muscular contractility is not derived from the nervous centres, and that it may be stimulated into action by direct applications, but do not prove that there is no active agency exercised by the nerve centres, as is required by the assertion. He proceeds then to forestall an objection:—

"But it may be asked, is not a fatal objection to this view to be drawn from the mode in which the will acts in producing muscular contraction? Is it not certain that the will acts in this case by stimulating the muscle to contract? It is difficult, no doubt, to think differently. It is more than difficult to wean the mind from so old an idea. But, on the other hand, it must not be forgotten that the will may have *acted* in bringing about muscular contraction, not by imparting anything to the muscles, but by withholding something from the muscles, and this being the case, we may well refuse to allow a mere opinion respecting the action of the will, however sanctioned by time that opinion may be, to rank as an objection to a view of the action of 'nervous influence' in muscular motion, which view appears to arise necessarily out of the general history of 'nervous influence' as concerned in muscular motion."

Now in reply to this, we would ask, what is the nature of fatigue? Can we suppose it to be produced by the cessation of

action, or by the withholding of "something" which has been in constant action, preventing the physical forces of molecular attraction from manifesting themselves in the muscles? Is it not rather the result of the generation of power? According to Dr. Radcliffe's theory, a man should be most tired when he is most at rest—it is during rest that the vital powers are at work resisting the molecular attractions; therefore, in future he who is tired must work that his vital powers may recruit themselves, and it must be a mistake to seek relief from fatigue in rest or sleep. Then again the waste of the tissues,—when does it occur? Is it during the quiescence of the muscles, when the vital agencies are most at work, or during the period when the physical molecular forces are in operation? If the theory be true, it is surely a mistake to suppose that exertion causes an increased demand for food. What a mistake must not our fox-hunting country gentlemen make?

We pass over the section, in which it is argued that blood is not a stimulus to the contractions of a muscle, but rather to its elongation, and proceed to the next, which is intended to prove *that contraction is not produced by the stimulation of any mechanical agent.* The explanation offered for those cases in which contraction follows mechanical irritation is, that the contact serves to *discharge* something of which electricity is one of the signs, and that the contraction is one of the results of this discharge. It is admitted that this idea is not without its difficulties. One of these is, that the contraction ensues equally whether the contact be by means of a conductor or non-conductor. This it is attempted to get over by referring to the analogy presented by the electric organs of the torpedo, which, it is said, discharge their electricity when touched by a conductor or non-conductor, the only difference being, that with a conductor the discharge is felt, with a non-conductor it is not. And if this be so, it is inferred that in a muscle it is a matter of little importance whether the mechanical agent is a conductor or non-conductor, for all that is necessary is to suppose that the discharge does not extend beyond the muscle when a non-conductor is used. We know not on what authority this statement with regard to the torpedo is made, whether on experiments of Dr. Radcliffe's own or not, but we cannot but hesitate to accept it, so much does it seem to be at variance with the facts established by Matteucci, Walsh, Davy, and others. But, even granting that the fact is so, it cannot be regarded as affording a true analogy to muscles, as the experiments of Humboldt and others have proved that the fish has not

only a voluntary power of discharging its electricity, but even of determining the direction of the current.

Another difficulty arises from the fact that a muscle contracts with a very different degree of force when lightly touched and when briskly tapped; the theory would require that the discharge of electricity should be equally perfect in either case. Dr. Radcliffe suggests that the electric tension of the fibres being low, and their insulation so complete, it is necessary to bring them into close contact, as they would be by a sharp blow, before any discharge could be produced.

In neither of these cases does the reasoning of Dr. Radcliffe prove satisfactory, nor is it more so with regard to the contractions of the vesiculæ seminales, bladder, bowel, or uterus, which he also considers in this section. It is difficult to see why movements so decidedly of a reflex character as those concerned in the ejaculation of semen, should be introduced here; but the explanation offered for all is, that the sensory nerves are exhausted by the expenditure of nerve substance and nervous influence taking place in sensation, and that this exhaustion extends to the motor nerves, and that contraction is set up because these do not supply the usual amount of nervous influence. The whole argument is obscure and very weak.

It is not necessary that we should follow the remaining sections of this chapter, as we have given quite sufficient to show its gist and tendency. We must, however, notice the statement that light stimulates muscles to elongate, and that the pupil is closed by the elongation of the radiating fibres of the iris in consequence of the stimulus of light, whereby the margin of the pupil is pushed inwards. We pass on, then, to the second proposition, which is,—

> "That muscular elongation is produced by the simple physical action of certain agents, electricity and others, and that muscular contraction is the simple physical consequence of the cessation of this action."

There are many objections to this part of the theory, some of which are stated and combated, though in some instances very feebly, more especially that drawn from the experiment of Schwann, whereby he proved, to our minds at least very completely, that the power of muscles decreases as the muscular particles approach one another, establishing a distinction between muscular contractility and molecular attraction, sufficient in itself to disprove Dr. Radcliffe's theory, for in molecular attraction the force increases as the particles approach

one another. However, an objection still more serious is not noticed, that is, that muscular relaxation (not elongation, as Dr. Radcliffe has it) is a passive act, not active, as the theory implies. This is sufficiently proved by the experiment of Œsterreicher, but still more convincingly by the observation of Bowman, that when a muscular fibre, with both ends free, contracts, the discs composing it remain permanently in the state produced by the contraction, but that, when the extremities of the fibre are attached, the discs become separated after the contraction has ceased, only by the stretching the fibre is subjected to. This one observation seems to us to be sufficient to overturn the whole of Dr. Radcliffe's theory.

The third proposition is, as we have already seen,—that the special muscular movements which are concerned in carrying on the circulation—the rhythm of the heart and those movements of the vessels which are independent of the heart—are susceptible of a physical explanation when they are interpreted on the previous view of muscular action. The interpretation, so far as the heart is concerned, is, that the arterial blood, driven into the coronary arteries by the systole of the ventricles, rouses the muscular and nerve currents, which produce muscular elongation by counteracting the molecular forces, and thus produces the diastole, and that the diastole continues so long as the blood retains its arterial properties; when, however, this yields its oxygen and becomes venous, the currents flag, the molecular forces predominate, a contraction ensues, and so the systole is renewed. When the heart is removed from the body, it is the atmospheric air pervading its tissue that produces the effect; so long as its oxygen is unappropriated by the tissues, it stimulates the currents, and elongation is produced, but as soon as it is consumed, a contraction takes place, whereby the de-oxygenated air is displaced and a new supply taken in. It is scarcely necessary to point out the deficiencies of this explanation; we may, however, ask, why it is on this showing that when the heart is divided to a certain extent by a longitudinal incision both sides preserve their rhythm, but that, on continuing the incision further, the contractions become irregular, and the rhythm is lost? And, again, why is it that on dividing the ventricles by a transverse incision the apex ceases to beat, but the remainder continues its action for a length of time, though both are equally exposed to the air? These facts are, we opine, more satisfactorily explained by a reference to the position of the ganglia in the substance of the heart near the base, than by Dr. Radcliffe's theory. We may also express a doubt as to whether the arte-

rial blood circulates very freely through the walls of the heart during the systole; if not, what is it suspends the molecular attraction, and causes the elongation of the fibres?

We have thus followed Dr. Radcliffe through his physiological reasonings, and attempted to show some of the points wherein they fail, and have indicated our preference for the generally recognised doctrine. Let us now turn to the second part of his work, in which he treats of the diseases in which muscular contraction is in excess, introduced by the following remarks:—

"Epilepsy is at once the great type of convulsive disorders, and the key to their interpretation. Epilepsy, however, is a name which indicates much less than it did formerly. Thus, it does not indicate the epileptiform convulsion which is connected with certain positive diseases of the brain, with fever, with certain suppressed excretions, with 'irritation' in the gums and elsewhere, or with the moribund state; and it is difficult to say what it does indicate, for, as our diagnosis gains in exactness, epilepsy changes more and more from a special malady to a mere symptom. At the same time it is, and, in all probability, it always will be, convenient to take an ideal type of epilepsy, and regard it as a special malady, for there are, and ever must be, numberless cases in which, in their earlier stages at least, it will be very difficult, if not impossible, to recognise the disease of which the convulsion is merely a symptom.

"Passing from this ideal form of epilepsy to the consideration of the actual disorders in which muscular contraction is in excess, it is found that these disorders may be conveniently divided into three categories, of which the distinctive signs are—tremor, convulsion, and spasm; but it must not be forgotten that such division is purely arbitrary, and that spasm, convulsion, and tremor, are continually occurring in the same case, and at the same time.

"The first category, in which the muscular disturbance takes the form of tremor, is that which includes the tremors of delicate and aged persons, of paralysis agitans, of delirium tremens, the rigors and subsultus of fevers, as well as the tremblings of slow mercurial poisoning.

"The second category, in which convulsion is the distinctive feature of the muscular disturbance, may be divided into two sections by the absence or presence of consciousness during the convulsions Where the consciousness is present, the convulsion may be called *simple;* where the consciousness is absent, it is *epileptiform*. Simple convulsion is that which is met with in the state called hysteria, in chorea, and in those strange affections which take an intermediate position between the two, as the dance of St. Vitus and St. John, tarantism, and other affections of the kind. Epileptiform convulsion includes the convulsions connected with certain diseases of the brain,—chronic softening, chronic meningitis, tumour, indu-

ration, hypertrophy, atrophy, congestion, apoplexy, inflammation—with fever, with certain suppressed excretions, with 'irritation' in the gums and elsewhere, and with the moribund state.

"The third category, in which prolonged muscular contraction or spasm is the distinctive state, includes catalepsy, tetanus, cholera, hydrophobia, ergotism, the rigidity of cerebral paralysis, the spasm connected with certain diseases of the spinal cord, and some other spasms of a minor character.

"The several chapters, as suggested by the previous considerations, will be—

"Chapter I. Of Simple Epilepsy; Chapter II. Of Tremor; Chapter III. Of Simple Convulsion; Chapter IV. Of Epileptiform Convulsion; Chapter V. Of Spasm."

The incongruous grouping together of the diseases included in the above categories is, perhaps, the necessary consequence of the doctrine on which it is founded, and seems to us to demonstrate its erroneous nature. How, for instance, can that system be correct which includes in one category the tremors of the aged, of delirium tremens, and the rigors and subsultus of fever? Then, again, the second category includes two classes of cases which are entirely distinct; and even of this category we find the second class, including convulsions, connected with acute and chronic disease of the brain, with fever and suppressed excretions, and with irritation of the gums, and elsewhere.

The following extracts will show the nature of the pathological views arrived at as to epilepsy, deduced from a consideration of the phenomena connected with the vascular system:—

"The frigid and clammy hand, the foot that will scarcely keep warm before the fire, the pale and sallow or dark and venous complexion, the habitual feeling of chilliness, are facts which appear to show that the circulation is wanting in vigour; and this inference is fully borne out by the pulse, which in simple epilepsy is rarely otherwise than weak and slow. Plethora, in the form so often exhibited in the butcher, is never met with, and feverish reaction is a rare occurrence, even as an accident. There are, indeed, cases of *epileptiform* disease, in which the circulation may exhibit a greater degree of activity, but these cases, as will be seen in the proper place, present no real objection to the conclusion that the habitual state of the circulation in epilepsy is one of depression.

"Nor is there any evidence of a contrary character in the fit itself. Upon the eve of the fit, if any change can be perceived, it is in all probability one in which the skin has become paler and more dusky than usual, and the pulse more feeble. At the instant of the fall in many, if not in all instances, a corpse-like pallor overspreads

the countenance—a phenomenon which can be only explained on the supposition that syncope is impending; a moment or two afterwards, a dull-red flush, rapidly deepening into livid blueness, or even blackness, takes the place of the paleness which had first overspread the countenance, the face and neck become frightfully bloated, and everything shows plainly that all respiration is at an end. This state of suffocation continues during the whole course of the convulsion, and so perfect is it that little or no arterial blood can find its way into the arteries during the convulsion. . . .

"Arguing, therefore, from the corpse-like paleness and comparative pulselessness of the onset of the paroxysm, and from the signs of positive and unmistakeable suffocation by which this stage of paleness and pulselessness is succeeded, the only conclusion would seem to be that the convulsion of epilepsy is connected with the want of a due supply of arterial blood. Indeed, the whole history of the paroxysm, as deduced from the condition of the vascular system, would seem to show that there is something utterly uncongenial between epilepsy and anything like arterial excitement.

"Nor is it any objection to this view, that the convulsion ceases when the blood has become thoroughly deprived of its arterial properties. On the contrary, the cessation of the convulsion at this time *may* be easily explained as the natural effect of the way in which the *nerves* must suffer from this very want of arterial blood. At any rate, it is certain that the nerves cannot discharge their office of conductors unless they are supplied with a due quantity of arterial blood. If, for example, the circulation in the hand be depressed or suspended by immersing the part in iced water, the power of feeling and of throwing the muscles into action, whether voluntarily or involuntarily, is partially or wholly destroyed. If the principal vessels of a limb be tied, a similar result ensues, until the collateral circulation is established. And hence it may be assumed, that there is a point in the process of suffocation, where, wanting the due supply of arterial blood, the nerves will cease to be conductors, and where, consequently, the convulsions will come to an end, —for, upon any hypothesis, it is evident that the convulsions will come to an end when the muscles are no longer required to respond to that change in the nervous centres which is concerned in producing contraction in the muscles."

It will be observed that the author is inconsistent with himself here, in speaking of a change in the nervous centres, as being concerned in producing contraction in the muscles, an inconsistency arising, no doubt, from the shortcomings of the theory. The phenomena presented by the nervous system are also held to indicate a state of inaction and exhaustion:—

"Interrogating the nervous system from a mental point of view, the facts will scarcely warrant the idea that epilepsy is connected with anything like over-action of the nervous system. On the contrary, everything seems to point to a state which is the very opposite of

this. Thus, the want of memory, the want of intelligence, the want of fancy, the want of purpose, which are habitual; the utter annihilation of everything mental in the fit itself; and the gloom and prostration which remain after the fit; all go to confirm the impression of mental inaction which is so generally conveyed at the very first glance by the dilated and sluggish pupil, and by the torpid features."

During the convulsion the brain is in a state of coma; it cannot be active because of the deficient supply of arterial blood, a conclusion confirmed by the experiments of Sir A. Cooper on the vertebral arteries. But it is asked, is there nothing else? is there no morbid irritability? But what is this state? Is it anything more than mere exhaustion?

"In difficult teething the strength is worn away by pain and want of sleep; in worm-disease the system is starved and exhausted by its hungry parasites; in uterine derangement the health is undermined, in all probability, by pain, or by sanguineous and other discharges. In each case there is unequivocal exhaustion of body and mind, and the symptoms of morbid irritability appear to be no other than the signs of such exhaustion. A weak person is more affected by the several agencies which act upon the body, because he has lost some of that innate strength which belongs to the strong person; and a person who is morbidly irritable is in reality one who, for want of this principle of strength, responds impatiently to the several stimuli which are appointed to call out his vital phenomena. In a word, this undue morbid irritability may be nothing else than the natural consequence of that general state of exhaustion, the signs of which are so legibly written upon the vascular and nervous systems of the epileptic. Indeed, after what has been said in the physiological premises, this is the only conclusion.

"For what, according to these premises, is the *modus operandi* of irritation? It is no other than this—that irritation, however brought about, acts by exhausting, and not by stimulating the nerve and muscle.

"And what, according to the same premises, is the significance of morbid irritability—of a state, that is to say, in which the muscles are more apt to contract when irritated, and more prone to remain contracted when contracted? It is not that these muscles are more supplied with nervous influence. It is that they are less supplied with this influence. Thus, the muscles of the two hind-legs of a frog become more irritable when the influence proceeding from the brain is cut off from them by dividing the spinal cord; and the muscles of one of these legs are rendered more irritable than the muscles of the other when they are cut off from the spinal cord by dividing the nerves where they leave the spinal column. It would seem, indeed, as if the disposition to muscular contraction were most antagonized where the largest amount of nervous influence was supplied to the muscles.

"There is no necessity, then, to look upon this morbid state of irritability as an evidence of the existence of any peculiar condition in some part of the nervous system; for, thus interpreted, it only signifies a state in which the muscles are ill supplied with nervous influence. Thus interpreted, indeed, morbid irritability only becomes another name for inefficient action of the nervous system.

"— The pathology of epilepsy, therefore, as deduced from a consideration of the phenomena belonging to the nervous system, is in harmony with what had been already deduced from a consideration of the phenomena belonging to the vascular system, and the conclusion is precisely what was to be expected from the previous investigations respecting the physiology of muscular action. From these previous investigations it was to be expected that coma and convulsions might go hand in hand together—for muscular contraction, according to these investigations, is to be looked for when a failure in the action of the nervous centres causes a failure in the amount of 'nervous influence' distributed to the muscles; and thus, this difficulty of the association of coma and convulsion being at an end, we need no longer repeat the questions which Foville asks despairingly—"Pourquoi tandis que l'intelligence et la sensibilité sont complètement abolies, l'action musculaire est elle si souvent partée au plus haut degré d'intensité qu'elle puisse atteindre? Pourquoi cette opposition si tranchée dans deux ordres de symptômes fournis par la souffrance du même organe? Comment se peut-il que la même altération survenue brusquement paralyse l'intelligence et la sensibilité, et excite au plus haut degré l'action des muscles? En d'autres termes, pourquoi, par suite d'un dérangement subitement développé, la portion des centres nerveux qui préside à l'intelligence et á la sensibilité est-elle anéantie dans son action, tandis que celle qui préside aux mouvemens voluntaires se trouve assez violemment excitée pour produire d'horribles convulsions?"

Apart from the peculiar physiological doctrines with which these views are coloured, we believe they present a true idea of the nature of most cases of simple epilepsy, and that the treatment recommended—good substantial diet, a judicious use of stimulants, the administration of tonics, and the application of counter-irritation, will do more for the relief of sufferers than any variations of the routine of bleeding, purging, and salivating that could be devised.

The views entertained by the author as to the diseases included in his first category, and in the first class of his second, may very easily be inferred from the exposition we have given of those held as to his "ideal type of epilepsy." With regard to those included in the remainder of the second category, and in the third, there is more difficulty. The leading principle inculcated is, that the convulsions only occur during the stages of collapse, either initiatory or secondary collapse, and at a period when a stimulating treatment is required. An examina-

tion of the diseases in these divisions, as we have already remarked, is the best refutation of the peculiar doctrines advocated. For example, with our present knowledge of reflex motor acts, who can admit that the convulsions from dentition, or from the irritation of worms, indicate a cutting-off of the supply of nervous influence from the affected muscles.

We have already said that the perusal of this work has afforded us pleasure. It is true, we cannot agree with the author, yet we can and do sincerely recommend the book to our readers, to those, especially, who value the cultivation of the science of medicine. They will find many facts that will, perhaps, be new to them, others placed in new lights, and the reasoning from all ingenious. To the so-called practical man, too, we recommend it, as affording many most valuable and important suggestions for the scientific treatment of not only the peculiar affections it specially refers to, but of disease generally.

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*A Three Weeks' Scamper through the Spas of Germany and Belgium, with an Appendix on the Nature and Uses of Mineral Waters.* By ERASMUS WILSON, F. R. S. London: Churchill. 1858. 12mo., pp. 368.

WE have delayed our notice of this amusing as well as scientific book until the present Number of our Journal, being anxious that it should fall under the view of our readers at the period when any of them who possibly can do so are likely to take their holiday. Written in a light, easy, and, we had almost said, "scampering" style, it is certainly the most useful guide for any one about to take a short Continental trip. Mr. Wilson hurries us over the ground from London to Calais, through Belgium, up the Rhine, into Bavaria, Baden-Baden, and home again, touching, as he goes along, at the many celebrated watering-places which are to be found in that route. The medical man will not only find directions for his own guidance, but many valuable hints to enable him to prescribe these important therapeutical aids for his patients. There is no class of diseases for which mineral waters are so necessary as affections of the skin; and, consequently, Mr. Wilson is especially qualified to give the profession advice on their relative value; and in the Appendix, which occupies some forty pages, we have a condensed summary of the different mineral springs which have been noticed in the body of his work, in the account of his Tour. From it we shall give one short extract, illustrative of the information to be there obtained.

"THERMAL WATERS.

"The thermal waters belong to the various classes into which mineral waters, in general, are divided; some are *muriated saline*, some *sulphated saline*, some *carbonated alkaline*, some *sulphuretted*, and others *negative*. Their temperature serves to increase the power of action of the salts which enter into their composition, renders them more acceptable to the stomach, and enables the stomach to bear a larger dose than it could otherwise digest. The warmth is also serviceable as determining an action of the secreting and emunctory organs, particularly the skin. These remarks apply to the waters when taken internally; and the high temperature is equally powerful, as a medical agent, when the waters are employed externally, in the form of baths; being either stimulant or sedative, according to the degree of temperature, and according to the mode of administration of the bath. The thermal waters, again, afford us another important and valuable agent in the steam which they give off, and which, collected by an appropriate apparatus, constitutes a vapour bath."

In conclusion, we cannot speak too highly of this interesting volume. So graphically written is it, that such of our readers as are unfortunately compelled to stay at home this autumn may take a few hours' holiday in imagination, by devoting an evening to its perusal.

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*A Manual of Photographic Manipulation, treating of the Practice of the Art; and its Various Applications to Nature.* By Lake Price. London: Churchill. 1858. Post 8vo, pp. 256.

Medicine and Medical Science derive so much important aid from the photographic art, that we expect for the future every student of medicine will learn its practice just as regularly as he learns to dissect. Before the discovery of photography, medical men constantly felt the great want of not being able to obtain readily delineations of disease. This is now removed; and every one, by a little study, and with not expensive apparatus, can by this art procure any number of faithful copies of diseased structure or appearance. Mr. Lake Price's Manual is especially adapted for the medical profession, containing, clearly set forth and in small compass, a full history of photographic manipulation, under the following heads:—First, the producing agents; second, the requisite apparatus; third, manipulations; fourth, subjects, their nature and treatment; fifth, printing processes; sixth, solutions and chemicals. It is a book that should be in the library of every member of the profession.

# PART III.

## MEDICAL MISCELLANY.

### TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY[a].

(*Continued from* vol. xxv. p. 478.)

SESSION 1857–58.

April 14, 1858.

Dr. R. Corbett, President, in the Chair.

*Observations on Infantile Syphilis, with Cases.* By Professor O'Connor.—"The subject which I intend bringing under the notice of the Society is not surpassed in interest by any in the whole range of medical science. It involves life both before and after birth, affects the peace of families in the most interesting social relations, and embraces questions of serious responsibility, both moral and legal, to the physician who may be engaged in the treatment of such cases. The difference of opinion amongst eminent men as to some facts and inferences relating to this subject makes it still more desirable that it should be brought under the notice of this Society, whose members have many opportunities of verifying or disproving the points in dispute.

"The disease may be considered, first, as it exists during uterine life; secondly, as to the causes which may produce it after birth, and whether it may be propagated farther than the infant affected. With reference to the first point, it may be laid down as the established opinion, that the father may, as it were, inoculate the ovum with syphilis, and the mother give birth to a diseased child, herself remaining uncontaminated; or the diseased mother may give birth to a syphilitic child, the male parent having no share in the communication of the disease; still more strange,

[a] These Reports have been furnished to us by Dr. S. Henry Hobart, Secretary to the Society.—Ed.

both parents might have been free from all vestige of disease long before the period of conception. This fact would not be credited unless it were corroborated, as it has been, by the most ample testimony. We have here a disease which has not potency enough to show itself by any external signs on either parent, still strong enough in the offspring to kill or disfigure. In all cases the growth of the fœtus appears to progress satisfactorily up to a certain period, namely, the fifth or sixth month, and then to die from the development of the poison within itself, and not from any change in the general health of the mother, or in the condition of the uterus or its appendages. The more the child becomes dependent on its own organization for the continuance of its existence and for its growth, the less it appears to be able to sustain life, and dies, as it were, of a species of syphilitic cachexia, or is born a puny, sickly infant. Sometimes, however, syphilitic children are born robust and apparently well nourished, but these are the exceptions. In all cases there is no mark on the child at the period of its birth to indicate the nature of its delicacy, the characteristic rash not appearing for several days afterwards. If it is thus impossible to diagnose syphilis in a living infant at the moment of birth, how much more is it difficult to recognise it in a still-born child! Is the physician, therefore, to wait till he sees a living child born with the syphilitic rash before he endeavours to eradicate the disease which may be the cause of so much domestic calamity; or, what should we deem sufficient evidence that syphilis is the cause of the death of the fœtus in utero? If a mother should give birth to two or three dead children in succession, about the fifth or sixth month, under nearly the same circumstances, that is, that she has had no accident, illness, or fright to cause the death of the fœtus, but that it died, as it were, of causes entirely independent of her, we should naturally inquire of the male parent whether he has had syphilis some time before marriage; and of the female such inquiries might be made, without exciting her suspicion, as may lead to a conclusion of her having been at some time after marriage even slightly affected with syphilis.

"The ascertainment of these facts, or even the first of the two, would be sufficient to justify the physician in placing both parents under the influence of a prolonged course of mercury. It may be said that a course of mercury is in itself an evil, and should not be resorted to except where a striking necessity exists. In answer to this it may be said that mercury may generally be given, if used judiciously, without any permanent injury to the constitution, and that the inconvenience attending its administration is not so great as to counterbalance, even in doubtful cases, the benefits which may accrue from its use. The following cases, out of many which have come under my notice, will illustrate the propriety of this course:—

"Some years since a lady gave birth to three still-born children in succession. At the birth of the third she came under my care. The child in each case arrived at about the fifth or sixth month,

and was born quite putrid, thus affording in itself no evidence of the cause of its death. On inquiring from the husband, it was ascertained that, some years before his marriage, he had syphilis, all trace of which had disappeared before this event. He was then in the enjoyment of perfect health. The wife had no marks of disease about her, except that she at one time remarked her hair had been unaccountably falling off. On these grounds both were submitted to a course of mercury, soon after which the lady became again pregnant, and gave birth to a perfectly healthy child at the full period. The wife of a respectable tradesman came to me about twelve months since, and stated she had been married about five years, and during that time had given birth to four dead children. She could not assign any probable cause, as she and her husband were in good health, and she was not exposed to any hardship. Having expressed a wish to see her husband, I ascertained from him that he had syphilis some time before marriage, of which he thought himself cured, but his wife showed some symptoms of the disease some time after, for which he got her treated, without acquainting her of the nature of her illness; that neither he nor his wife had since any symptom of the disease; and that it never entered into his head that it could be the cause of the premature birth of the children. I induced them both to submit to a prolonged course of mercury, which they did most patiently, and within the last few weeks the poor woman sent to me for inspection as healthy a child as could be seen. In either of these cases, if I had waited to see unmistakable symptoms of syphilis in the infant, I would be like the peasant who waited for the river to flow by before he would pass over, but by acting on strong probabilities, I was able to confer the greatest possible happiness on two families, and preserve the lives of many individuals subsequently. A third case came under my care, of a mother who had given birth to a putrid child, about the sixth month of pregnancy. In this case there was no doubt of the mother having been diseased, as she came under my treatment for syphilis some time after her marriage.

"After the birth of the child I prevailed on her to undergo a course of mercurial treatment, but her husband would not do that which would establish his guilt, which he always denied. In this case the child was born in strong health, but with a slight syphilitic rash, which was easily removed by treatment. I have never had the courage to administer a full course of mercury to a mother supposed to be carrying a syphilitic child, but have given mercurial alteratives in such cases, which I could not say were attended with beneficial results.

"Questions have arisen as to the cause of this disease, when arising after birth,—some asserting that it arises from contact of the infant with the vagina of the mother; and others accounting for it on the supposition that it may be acquired from the nurse's milk. These errors have arisen from not considering the fact already referred to, that the syphilitic infant never exhibits the rash for seve-

ral days, sometimes for months, after its birth. Another question, of more importance, and one not so easily disposed of, is, as to the possibility of the syphilitic child communicating the disease to a healthy nurse. The great majority of physicians, especially in this country, believe in the affirmative, whilst some men of considerable character doubt, if they do not entirely deny, the possibility of infection by this means. It must be confessed that, since Ricord's experiments to test the possibility of inoculating with the matter of secondary syphilis, the cases brought forward in proof of this fact (previously said to be universally observed) are not so numerous or convincing as might be expected. It therefore devolves on the members of the profession to throw as much light as possible on this important subject.

"A case of considerable interest occurred in this city some years since, in which the supposed infection of a nurse by an infant was made the subject of legal investigation. The nurse, previously healthy, got a sore on her nipple whilst nursing a child which was described as having the symptoms of syphilis. Some time after, she got a syphilitic rash, which was seen by several physicians. Her husband subsequently became infected, and she gave birth to a syphilitic infant, who died soon after. For these injuries to himself and his family the husband brought an action, and after the closest investigation by the Assistant Barrister, a decree was obtained for the amount sought; thereby establishing the serious legal responsibility both of the parent and physician who may give out such a child to nurse without apprizing the nurse of the risk she thereby incurs. Mr. Acton, in relating this case in his valuable work on Syphilis, incorrectly states that no decision was come to by the judge who tried it. The following case occurred in my practice since:—A delicate child was born of parents supposed to be perfectly healthy, but the father having led a dissipated life before marriage, I was the more ready on that account to recognise a slight syphilitic rash on the child, though I dared not express my suspicions to either parent. The mother refused permission to give the infant the smallest particle of medicine, and it soon pined away and died, but previously the servant who took care of the child, and frequently caressed it, was seized with an eruption which was pronounced at one of our infirmaries to be syphilitic—the young woman, a person of excellent character, all the time protesting her innocence of having got the disease in the ordinary way. In this asseveration I entirely concurred, being convinced that the disease was acquired from the infant, with whom she slept. My long connexion with the workhouse brought under my notice many cases of this nature, though the testimony of their truth was not as convincing as of those I have related. How these facts, and several similar, attested by surgeons of the first eminence, can be reconciled with the result of M. Ricord's experiments, it is difficult to say; but that infantile syphilis should differ from other forms of secondary syphilis is not to be doubted, if we credit the extraordinary

fact stated by Mr. Collis, that the diseased child cannot infect its own mother, though capable of communicating the contagion to any other nurse.

"In conclusion, it may be asserted that the almost universal opinion of the profession in this country attests the infectious nature of infantile syphilis, and that it is the duty of every physician to act on this belief where such serious consequences are involved."

## April 28, 1858.

### Dr. R. Corbett, President, in the Chair.

*Hydrothorax.*—Mr. Orpen exhibited a lung, and detailed the following case to the Society:—

Patrick Barnane, aged 35, a labourer, came into the Cork Union Hospital, April 13, 1858, under the care of Dr. W. C. Townsend. He states that he has been ailing since Christmas, at which period he was in bed for a week, with a stitch in his left side; he was able to resume his occupation, and continued working up to ten days previous to his coming to the hospital. On admission, his breathing was very difficult and rapid; his face and lips were of a dusky bluish colour; there is no movement of the left side of his chest, which is bulged out and larger than the right; respiration abdominal and by right lung; he is very feeble, and cannot lie on his back nor on the right side; his pulse is rapid and small; percussion gives an intensely dull flat sound in every portion of the left side of his chest. On applying the stethoscope, it was found that there was no air passing into the left lung; the sounds of the heart were inaudible; bronchial râles all over the right lung; ordered to have a powder containing calomel, 1½ grs., powdered squill, 1 gr., nitrate of potash 10 grs., every three hours; and a turpentine stupe applied three times during the day over his chest and left side, and to get 1 oz. of whiskey every four hours.

15th. Is a good deal relieved; the dyspnœa not so distressing; one powder every six hours; continue whiskey.

16th. His gums are touched; he says he feels much better; omit the powders.

Compound powder of jalap, 1 drachm three times daily; half a pint of beef-tea; continue whiskey.

18th. Is not so well to-day; the dyspnœa has somewhat increased; there is general anasarca; his feet are swollen; feels very weak; stop his powders; let him have 1 oz. of an aromatic mixture, every second or third hour; continue the whiskey, beef-tea, &c. He continued sinking, and died on the 22nd.

*Autopsy*, 26 hours after death. Œdema of the body generally; the left side of his chest was enormously distended. On removing the integuments in the usual way, and cutting through the cartilages of the ribs of the left side, a jet of fluid escaped; on raising the sternum the entire pleural cavity on the left side was found to be completely filled with a transparent fluid of a pale lemon colour, to the amount of seven or eight pints; a great quantity of yellowish-

white lymph was seen floating in this fluid. The pericardium, especially the portion next to the left lung, was coated all over with lymph. On emptying out the fluid, the lung, which was very much collapsed, and about the size of a large orange, was found suspended in the upper and back part of the pleural cavity by two thick and strong filamentous bands, one of which was attached to the side of the pleura between the fourth and fifth ribs; the second was adherent to the pericardium and diaphragm. There was also a quantity of fluid in the bag of the pericardium; the heart appeared soft and flabby; no alteration was observed in its valves.

*Case of Deranged Uterine Function, with Skin Affection.* By John Williams, M.D.—"I am induced to bring this case before the Society this evening chiefly through a desire to become acquainted with the experience of those members present who may have had many such like under their observation. It is the first that has occurred in my practice, and I shall therefore confine my remarks to a detail of the existing symptoms, the treatment adopted, its result, and the conclusions which I arrived at as to the nature of the case from my review of the whole. I therefore select the two prominent features in the case as its title, and shall merely further premise, that I would desire of those who may hastily conclude that I erroneously regard them as cause and effect—which I certainly do—to withhold their judgment for the present.

"Miss —— aged 28 or 29, of perfectly healthy appearance, and of what is commonly known as the nervous temperament, consulted me in November, 1857, on account of a most distressing affection of the skin, which made its appearance for more than three years, at periods varying from six weeks to three months, and was accompanied by intense itching; so troublesome was this symptom that she dignified the eruption with the style and title of 'mange.' The history she gave me of her case was, that about three years ago she suffered from great mental distress, occasioned by the death of a very near relative, and that since then she has suffered from 'this rash,' which, without any premonitory symptoms, suddenly comes on. It appears as raised elevations of the skin, varying in shape and size, of a white colour, and attended with great heat and intense itching. The trunk is more thickly studded over with them than the extremities—the head and neck particularly—the ears often become much enlarged. The constitutional symptoms that are present while the rash is coming out are headach, referred to the frontal region; nausea, great heat of skin, and thirst. The duration of the rash is generally from fifteen to twenty-four hours; after this period very slight traces of it are to be seen. On making particular inquiries as to the state of her health, I was assured it was very good. I ascertained, however, that the catamenia, although regular in making their appearance, were so scanty as scarcely to deserve the name. She also stated she is very easily depressed, but in all other respects she has no further complaint what-

soever to make; she sleeps well and eats well, and can confidently state that no article of diet, such as fish, salad, vinegar, &c., has ever induced the skin affection; neither has change of air, nor any other appreciable cause. In concluding this account she told me she had taken either 150 or 250 (I forget which) of Blancard's pills of iodide of iron, but did not experience the least good effect from them; and had also taken a mixture which contained aromatic iron mixture, with the compound decoction of aloes, which I had previously ordered with good effect in a case of amenorrhœa that happened to have fallen under this lady's observation; but it produced griping, and she was obliged to stop it. I was asked for my opinion as to the nature of this case, which hitherto had not proved amenable to treatment, and I must confess I felt in rather an awkward position; however, I gave it as my decided conviction that deranged menstruation was the cause of the skin affection, and that if treatment succeeded in restoring the healthy function of the uterus, it was more than probable the distressing affection of the skin would cease to appear. How far, Gentlemen, I was justified in making this statement, you will please to offer your remarks on. I did consider the case in this light. The skin affection evidently was urticaria. I ordered her one grain and a half of quina in pills, to be taken twice daily, and a mixture of aromatic iron mixture, with the compound decoction of aloes, at bedtime; also two leeches to be applied to the inguinal region at the time the menses usually appeared; tepid mustard hip-baths, and generous diet. From the griping that it occasioned, I was obliged to discontinue the aloes, but the remainder of the treatment was steadily persevered in. At the next menstrual period, the discharge was much augmented, and during four months she had but one very slight return of the rash. Her strength and spirits were now so much improved, that she stated the continuance of the quina treatment had almost restored her to perfect health, and she then discontinued all treatment. At the next two menstrual periods the discharge was nearly as scanty as before. She now got an attack of measles, from which she quickly recovered, and about three weeks ago called on me to ascertain if it were my wish that she should renew the same treatment. I recommended it in part, as there seemed to be considerable debility after the measles, and the menses were as scanty as before. In two days she again called to say she had had in the interim as severe an attack of 'the rash' as ever. At this time, with such debility present, after rubeola in an adult, I could not be surprised at its appearance, and I am rather sanguine as to its ultimate removal, if the normal function of the uterus be permanently established; even the patient's friends remarked, that from the circumstances that attended the late attack, they felt assured 'one hinged on the other.'

"Dr. Montgomery, in an article 'On the Reciprocal Sympathies between the Uterus and Bladder in Woman,' read before the Medical Association of the College of Physicians in November, 1857, states that it is familiar with us all, that, in the human female, 'there is an

ultimate reciprocal sympathy between the uterus and bladder, and *other parts of the urinary apparatus*,' and illustrates these remarks by cases: amongst them he gives a case in which distressing itching of the pudendum existed to such a degree that life was felt a burden. Every description of lotion and ointment had been used in vain. Ultimately, examination showed an intense congestion of the cervix uteri, which was made the object of treatment, and on its removal the pruritus, and all its miserable concomitants, ceased. Now I believe the case I have brought before this Society is illustrative of an existing sympathy between the skin and uterus, which I think is further borne out by the result of treatment. Dr. Montgomery's experience has not led him to recognise such, but I must candidly say that, with due deference to one whom I consider as the best authority on the subject, I could not possibly be led to any other conclusion.

"May 10. Up to the present time there has been no reappearance of this distressing skin affection."

## May 12th, 1858.

Dr. R. Corbett, President, in the Chair.

*Case of Fever, with unusual Symptoms.* By Wm. Cummins, M.D. —"I copy the following case from my note-book :—

"December 2, 1857. Master G., a fine boy, five years old, began to exhibit symptoms of general delicacy some months since, consisting of debility, loss of appetite, and flying pains in various parts of the body, with constant pain in the hip, and dragging of the corresponding limb when walking.

"These symptoms were met in the usual manner, but without much decided or permanent improvement, except in the local affection. About ten days since he began to suffer from the ordinary remittent fever of childhood, which was removed at first by treatment, but recurred within the last few days; up to to-day, however, leaving him in tolerable health and spirits every morning. He is now feverish, complains of nausea and headach, as well as of a severe pain in left ankle.

"3rd. Still very feverish, with partial diaphoresis; urine depositing copiously a white precipitate; headach, nausea, great thirst, partial sweats, flying pains in all the joints and back, severe pain of left instep and ankle, which is red and tender.

"4th. Rather better, but the pain and redness of ankle still continue, and have extended upwards about half the leg.

"5th. The redness and swelling have subsided, but he is still feverish.

"6th. Spent a bad night, and appears very low and weak; pulse 130, feeble; sordes on lips, tongue brown and dry; conjunctivæ much congested, but no head symptoms; urine depositing phosphates copiously; discharge from bowels of a bluish colour.

"7th. Much in the same condition, but the urine, which is still

loaded with phosphates, appears yellow, as if tinged with bile; the conjunctivæ and skin are also of a pale lemon-yellow colour.

"8th. Rather improved; passed two lumbrici this morning.

"9th. Spent a bad night, with constant muttering delirium, though perfectly conscious when roused; pulse 140, very feeble; tongue has continued all along brown and dry, and the lips and teeth covered with sordes; gums are soft and bleeding slightly; urine copious, has ceased to deposit, but is very yellow and high-coloured; at no time during the illness has there been any tenderness or pain over any part of the abdomen, but now patient makes some complaint when pressed upon the hepatic region.

"During my afternoon visit I found him continuing much in the same condition, but towards evening I was sent for in a hurry, as he had passed several black stools, and had twice vomited a matter which, on close examination, presented all the characteristics which I have observed in the black vomit of yellow fever. He continued perfectly rational up to the moment of his death, which occurred about two hours after.

"The symptoms which this case presented previous to fully developing itself, made me anticipate acute rheumatism, and as such I treated it, but the train of symptoms which commenced on the 6th, and continued up to the day of his death, soon made me suspect that I had a far more fatal disease to cope with.

"From day to day, as I watched the progress of symptoms, I became more and more reminded of that disease which numbers its victims by thousands within the tropics, but rarely carries its devastations to more temperate regions, and as yet has only been observed as isolated cases in this country. I did not, however, at the time believe the case to be yellow fever, or treat it as such, and although this is, I think, to be regretted, as far as the individual case is concerned, yet it proves I was not biassed in favour of any particular opinion, when, on afterwards reviewing my notes, taken carefully from day to day, I could not help coming to the conclusion, that if this case had occurred in any of the habitats of yellow fever, there would not have been a second opinion about pronouncing it to be that disease.

"At the time this case occurred yellow fever, having transgressed its ordinary bounds, had visited Lisbon, and was making fearful ravages there. I believe also that when the cases of yellow fever observed and published by the late Dr. Graves occurred in the Meath Hospital, Dublin, it was also raging in the south of Europe. Such coincidences ought to lead all medical men to be watchful and suspicious whenever the epidemic rages so much nearer than usual to our shores.

"If I had had the least expectation of meeting a case of yellow fever, or even such a close resemblance to it in Irish practice, I should without doubt have treated my patient with quina in large doses, and I am certain he would have had a far better chance of recovery."

The PRESIDENT then read the following case of *Inversion of the Uterus:*—"Some years ago I was called by a medical friend to see, in consultation with him, a lady aged about 26, who had been several days previously confined, under the attendance of another practitioner. The latter had the care of the patient to within a day or two of my visit, and had stated to the family that the patient was suffering from '*uterine tumour.*' But the friends, finding her symptoms unimproved, dismissed him. The chief cause of alarm was continued hemorrhage, deeply influencing her health, and, of course, confining her to bed. As far as we could learn, the case (a primipara) during labour had progressed most favourably, and the child was born within the usual period. She had previously enjoyed good health. We found her debilitated, pale, and anemic; pulse small and frequent; tongue white and flabby, with nausea, and clammy perspiration. It was stated that she had been taking nourishment in various forms, with wine, and did not reject it. She had no pain, and the chief complaint was the continued flow per vaginam. On examination there was a prominent tumour, easily reached by the finger, which, on pressure, was unyielding, and at the upper portion was felt a ring of some thickness, around which the finger could be passed. There was no hypogastric tumour, and I confess I felt, in common with my confrere, much difficulty in forming a diagnosis in the case. We both feared exhibiting any doubt, and remained for some hours in the house, so as again, if possible, to satisfy ourselves as to the cause. In the interim we directed the use of an astringent lotion, continued the nourishment with wine, and at the end of three or four hours again examined, when both came to the conclusion that it was, beyond doubt, an inversion of the uterus. In forming this opinion we had not at the time anything to guide us as to how it had been caused. Having made up our minds, we told the patient's husband that the case was a hazardous one, and suggested that under the circumstances, the advice of some practitioner of longer experience than ours, should be sought for. This was at once assented to, and a medical man of long standing, named by the husband himself, was summoned, and arrived in the evening. Without communicating our united opinion, further than that a tumour was to be felt, we requested that he should satisfy himself as to its nature. He made two or three examinations at intervals, and at length pronounced it to be polypus uteri, with a thick stem. To this we then demurred, and gave our reasons: among the rest, the want of hypogastric tumour, which he most positively stated did exist, but which we again and again said we could not distinguish. He also said that it was only a short time previous that he and another practitioner, a man, too, of extensive practice at the time, had found great difficulty in diagnosing a similar case, but that they eventually operated, and brought off a large polypus. The responsibility in the present case was then thrown upon him, as we distinctly refused to take any on ourselves, as to his proposition of applying a ligature.

He did, however, apply the ligature, and that most dexterously, but on his tightening it the poor patient complained of acute torture. This made no impression on him, and after recommending continued doses of opium he left for home, a distance of twelve or fourteen miles, and my friend who had been in attendance with me was also obliged to leave, so that the conduct of the case devolved upon me. But for the friendship which I entertained for the operator, I should not have undertaken the office, and I confess, when he so perseveringly insisted on the case being one of polypus, that I began to doubt my own opinion. In the course of the night I was summoned in consequence of the agony which the patient was suffering, despite the opiates which she had taken. It was truly painful to witness her sufferings, and I unhesitatingly loosed the ligature, and procured her ease, so that she got some sleep. I sent specially for the operator, who on his arrival seemed much disappointed at the result, and not well pleased at my having relaxed the ligature. He again tightened it, and the same suffering ensued, but this did not seem to convince him, as he said it should be further tightened on the following day. This trouble he was saved, as within the next eight or ten hours the poor patient succumbed. The question then arose, how were I and my friend to prove that we were right, and Dr. —— (long since dead) wrong. We proposed a post-mortem, and after some little difficulty the husband assented to it, provided we could perform it at a very early hour in the morning. This we promised, and arrived at the house before 5 o'clock of a summer's morning. The husband met, and told us that the females of the family had peremptorily refused to allow a necropsy. We were, of course, obliged to submit, and on going into the room where the body lay, we found a fond relative, aunt to the deceased, keeping watch at that early hour. The double canula remained in position with the ligature attached, and the thought struck me, that by a little stratagem, I might, if the ligature had made a deep impression, possess myself of the separated portion, whether of uterus or polypus. I accordingly requested the old lady kindly to bring a basin of warm water and a sponge, for the purpose of removing the instrument, and while she was absent I introduced my hand into the vagina, and without much difficulty brought away the portion below the ligature. I hastily put it up in a bladder which I had provided, and we retired. On arrival at my house, a distance of four miles, we examined, and, alas! fully proved that we had the inverted fundus uteri. Next morning I took it to the operator, who had heard of her death, but who expressed to me his great regret that a post-mortem had been refused. I at once produced the glass jar, containing the preparation; and he confessed his error. He wanted to publish the case at once; I said it would be very unwise to do so. He said, in reply, that it ought at some time or other be given to the profession as a warning, and at the same time made me promise to do so. I have always felt a delicacy about it, and in truth I had forgotten it until the case of Dr. Tyler Smith in a late Number of the Lancet

brought it to my recollection; and having mentioned it at the last meeting of Council, Dr. O'Connor urged me to give the detail, which I fear I have done at too great length.

"Some time after the death of this patient, I was called on to see a lady, a friend of hers, who spoke freely of what she considered the cause of the fatality, and of which I for the first time heard. It seemed that this lady was in the room with the deceased pending her travail, and she said that, after the birth of the child, the medical attendant, finding that the placenta had not been thrown off, proceeded to remove it, and used great violence, causing the patient to scream out, and say 'he was killing her.' Of the truth of this I had no reason to doubt. He has long since been called to his account."

Dr. R. Corbett, President, in the Chair.

May 25, 1858.

Dr. William C. Townsend exhibited the heart of a man named Murphy, aged about 23 years, who had been under his care for about four months, in the Cork Union Hospital, labouring under extensive heart disease.

He had been in the South Infirmary for three months previous to his admission.

The action of the heart was very strong and tumultuous, with great increase in extent of the area of impulse, a distinct double bruit of a sawing character was audible all over the præcordial region, and extended up the cervical vessels; strong jugular pulsations existed on both sides. The plan of treatment adopted was, avoidance of all stimulants, the occasional use of alteratives and diuretics, a nutritious but unstimulating diet. Under this treatment he continued to enjoy very tolerable health until about the 1st of May, when he caught small-pox from one of the patients; and although it was of a very mild character, he became greatly depressed: from this depression he never rallied. He quickly became quite anemic, the heart acting with great force, the pulse at the same time very quick and feeble—"the pulse of unfilled vessels." He died on the 24th of May.

On examination twenty-four hours after death, the heart was found to be enormously enlarged, the pericardium firmly attached to it in every part; it weighed 48 ounces. The left ventricle was very much dilated, hypertrophied, and capable of containing at least one pint of fluid; the right side of the heart was also hypertrophied and dilated; the valves were healthy; both sides contained large clots of dark blood.

Epidemic Committee.—It having been thought desirable that an annual report of the epidemic diseases of Cork and its vicinity should be published by the Society, a sub-committee had been appointed at a former meeting for that purpose,—the intention being merely to record the main facts as to what epidemics prevailed

during each year; what unusual symptoms might be observed in each, whether as to symptoms, effect of treatment, or as to the locality in which they prevail; and any other points that may appear of interest to the gentlemen drawing out the reports,—such a course being considered of more practical utility than that of giving a statistical account of the exact number of cases that shall from time to time occur.

In compliance with this determination, the following reports were now read, though in many respects very defective (in consequence of the late period at which the undertaking was entered upon, the very imperfectly organized mode of acquiring information, and the still more unsatisfactory nature of the few replies made to inquiries for such information).

*Report on Ague.* By Dr. Cummins.—"As I have been unable to procure statistics from the various districts in Cork and its vicinity, I am obliged to confine my remarks on ague principally to the disease as it appeared in my own (Blackrock) district. This is less important, however, as ague has been far more prevalent here than in any part of the county, in consequence, I believe, of the close proximity of the Park, which has been more or less in a marshy condition since it was reclaimed from the river (where it previously existed as a mud-bank uncovered at low water), about fifteen years ago.

"Previous to the year 1844, or rather for more than twenty years antecedent to that period, ague was almost unknown in Cork; indeed, many physicians of large practice had never seen a case of it, and then it commenced very gradually, year after year, increasing its ravages, until it became a perfect plague in 1857, the year I have to report on. In my own registry of cases I find 113 of intermittent fever, and 62 of continued; and these latter ought for the most part to have been entered under the head of ague, as they were cases of that disease, which commenced with a single paroxysm often of six or eight days' duration. It was when the Park was dried and cracked by the sun, with a subsoil of damp and slimy mud, that this excessive virulence occurred. But although I think the Park must be connected with the ague in its vicinity, and indeed for several miles round, yet as the disease has been more or less prevalent in parts of the county too remote from this source to be affected by it, there must have been some general epidemic tendency to the disease, or some peculiar atmospheric condition, during the absence of which for many years local miasmatic poisons were impotent[a]. I am not aware that ague has ever been attributed to a more general cause than marsh influence, and yet I think the long absence of the disease from the county of Cork, and its almost simultaneous appearance in a great number of localities, can be explained in no other way; and

[a] Another fact in corroboration of this view has been mentioned to me by my friend, Mr. F. Jennings:—that ague, which has been long absent from Lincolnshire, where it formerly reigned triumphant, has returned within the last two or three years, and is at present exceedingly prevalent there.

if such is really the case, then marsh influence bears only the same relation as a cause to ague, that decaying animal matter does to typhus; in fact, it becomes rather a predisposing than an exciting cause of the disease.

"During the early months of 1857, the type of intermittent fever was generally quotidian, and late in the year almost all tertian, a few being what is called double tertian. Some few of the cases more closely resembled remittent than intermittent fever, and one of these was accompanied by intense maniacal excitement and delirium, with exacerbations every afternoon. One case—and it was a most interesting one, the particulars of which I hope at some future period to lay before the Society—gradually degenerated into hysteria, with spinal irritation, and in succession presented all the most alarming symptoms of hepatitis, peritonitis, laryngitis, pleuritis, and intense dyspnœa. Her recovery was tedious, and again this spring, when ague reappeared, her spinal irritation, preceded as before by ague, reappeared also, and she is at present in the South Infirmary, under the care of Dr. Lloyd. Another very unusual and interesting case also occurred: a pregnant woman was attacked by ague, which partially yielded to quina; at the full time she gave birth to a child, which had the characteristic appearances of skin which usually accompanies ague, and 'shook' the day after it was born. I believe this is the earliest instance on record of ague in the infant. In childhood ague has been common, and is more manageable than in the adult, if we except the difficulty of making them take so bitter a medicine as quina. The spleen has been remarkably free from enlargement in most cases, which I attribute in some measure to my treatment, a most important point in which is to secure a free flow from the tributaries of the vena porta, *on the day of the paroxysm.*

"Quina is of course the sheet-anchor; it rarely fails to cure the disease in a few days, if given in sufficient doses, but I must admit that relapses are numerous, and are only to be prevented by leaving the ague district, or continuing the medicine (which the patient soon acquires a taste for) in small doses for a considerable period. I can scarcely say I have given arsenic a trial, as although I have much faith in it, especially in cases where quina has been *irregularly* given, until the system is saturated with it, without the disease being cured, it is not suited for dispensary practice."

*Report on the Exanthemata, &c.* By Drs. Cremen and S. H. Hobart.—During the winter of 1855–56, the most severe epidemic of small-pox which had appeared for many years in this county prevailed throughout Cork and its vicinity. The number attacked was very great; and in a large proportion of cases the disease was confluent, and in every respect very severe. During the same period scarlatina also prevailed to a very great extent, and took on a character heretofore almost unknown; for, while that disease is usually of a remarkably mild character in Cork, the epidemic of this period,

and which continued for some of the early summer months, was of a remarkably fatal character; many cases being carried off from swelling of the glands of the neck (this occurring in the submaxillary and both parotidean regions together, soon caused death by suffocation); in other cases, fatal sloughing of the throat took place; while many died apparently by the debilitating influence of the typhoid form of fever, which in most cases accompanied the disease. About midsummer, however, this disease, though it did not disappear, ceased to be formidable, as it now returned to its ordinary mild type of this part of the country; and towards the close of the year it had almost disappeared. Measles also became very prevalent during the summer of this year, but were by no means of the serious character assumed by the small-pox and scarlatina. It was probably owing to the extreme severity of these diseases during this period that the year 1857 appeared to be so remarkably healthy; for, though an epidemic tendency to all still existed, as proved by the occurrence of several cases in various localities, the number attacked were comparatively few, and the amount of mortality particularly small. It may, in fact, be briefly stated that some half-dozen cases of small-pox did occur, of a mild and manageable character; that scarlatina prevailed, more or less, during the entire year, but chiefly so during the early and late months, and always in a mild form, while it was comparatively seldom followed by anasarca, whereas that was a very frequent sequela in the epidemic of 1856. In the north side of the city a considerable number of cases of cynanche occurred, in which no trace of eruption could be detected, though carefully looked for; but of these a larger proportion became anasarcous afterwards than of those affected with the true form of scarlatina. In several cases of the latter affection (i. e. scarlatina) a remarkable and most distressing sense of formication was felt over the surface of the trunk, particularly of the back. This was chiefly observed when diaphoresis was just commencing, and sometimes continued to come on at intervals for several weeks after all other symptoms of the disease had disappeared. A medical man, who experienced this symptom in his own person, says that "he always felt (when profuse perspiration was coming on under the influence of diaphoretics) as if a number of pins were being thrust into the skin; or as if the pores of the skin having become obstructed, the perspiration, which now became pent up, was endeavouring to force its way to the surface; and this, occurring in innumerable points, caused this intense sense of a sort of lancinating formication which compelled him immediately to throw off the clothes, so as to check the perspiration, and at the same time to scratch violently such parts of the trunk as were accessible to the hands." Measles also prevailed during the entire year, but not to as great an extent as scarlatina; in some districts appearing to alternate with the latter disease, with regard to the period of its greatest prevalence, while in other districts the two diseases occurred together, often affecting different children in the same house at the same time.

Erysipelas did not occur as an epidemic at any period of the year, and such casual cases as did occur were of a favourable character.

This year was particularly free from diarrhœa and dysentery, while the cases of the ordinary Irish cholera were decidedly below the average number.

*Report on Fever*, 1857. By JOHN F. M'EVERS, M. D., one of the Physicians to the Cork Fever Hospital.—"The number of persons admitted into the Cork Fever Hospital for the year 1857 was considerably less than the admissions of the previous year. The highest number admitted was in May, and the lowest number in the month of October.

"The type of fever presented the usual varieties of typhus, typhoid, and synochus. Cases of the bilious, remittent, or gastric form were comparatively few.

"The summer of 1857, protracted far into autumn, was the hottest we had experienced for many years; it was hotter than the remarkable summer of the preceding year, which was the hottest since that of 1846. The protracted heat of both summers was not, however, aggravated by drought,—a circumstance to which, perhaps, may be attributed the infrequency of cases of bilious, remittent, or gastric fever, which had been so common in previous years. Many cases of typhus admitted in the winter months were complicated with pneumonia, which generally yielded to a steady perseverance in a stimulating treatment, especially wine and brandy or whiskey emulsion. When pain of the side was present, indicative of the presence of pneumo-pleuritis, great benefit was derived from the employment of dry cupping, leeching being seldom resorted to, except when the disease attacked young persons of vigorous constitutions. In the dyspnœa attendant on this form of fever, I have found the greatest advantage from the use of chloroform by means of inhalation: the mode employed being a handkerchief, upon which was sprinkled from 30 to 40 drops of the remedy. This is repeated occasionally, and the relief afforded is, indeed, very remarkable.

"Whilst on the subject of chloroform, I may also mention that in my hands the internal use of this agent has proved, in many cases of fever, highly beneficial. For instance, in those cases of typhus in which head symptoms, with loss of sleep, set in at an early period—we are sometimes loth to resort to opiates to produce sleep; and it is here that the internal administration of chloroform has been singularly useful. I give three doses of 30 minims each—one every two hours; the second generally produces sleep. Another distressing symptom in fever, generally speaking, very little under the control of ordinary remedies—I mean singultus—is often removed by chloroform. For that symptom I have found the best mode of administering the remedy is in its pure state,—a few drops occasionally on a lump of sugar.

"The *quæstio vexata* of the identity of typhus and typhoid fever

has occupied me a little; and the many cases which have presented themselves to my notice within the last year, exhibiting those peculiarities observed and described by writers of the present day, as constituting the disease named typhoid fever, leave me no doubt that this form of fever must in future take a place in our nosology as a disease differing essentially from typhus or from any other form heretofore described."

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*Case of Puerperal Mania.* By Lombe Atthill, M. B., Licentiate of the Colleges of Physicians and Surgeons of Ireland.

The following case, though not possessing any very new feature, yet being in some respects interesting, I shall briefly detail:—

Mrs. M., aged about 25, was delivered, after an easy and natural labour, at 4 o'clock in the afternoon of Saturday, 15th January last. This was her fourth confinement. Her previous labours had all been natural, and her convalescence on each occasion rapid. It appears (for she was not at this time under my care) that she was well for about three hours after delivery, when she had a slight hysterical fit, and spoke incoherently; but this passed off rapidly, and did not cause much alarm. After a little time, however, she again began to wander, and when her medical attendant visited her at 11 o'clock at night, he found her in a state of great mental excitement, it being a matter of difficulty to restrain her from jumping out of bed. He administered a draught, containing tincture of hyoscyamus, solution of acetate of ammonia, and aromatic spirits of ammonia. At about 11 o'clock on the following morning I saw her for the first time. She was then evidently much quieter; in fact, were it not that she answered my questions abruptly, and started at the least noise, I should not have noticed anything extraordinary in her manner. She had not, I learned, slept even for a moment since her delivery. She complained of intense headach. The pulse was small and rapid, 130 in the minute; the lochia were completely suppressed, but there was no abdominal tenderness. I ordered her to be kept perfectly quiet, and to take a tablespoonful every hour of a mixture containing 1 drachm of the solution of morphia, and 1 drachm of antimonial wine in 8 oz. of camphor mixture. Light unstimulating nourishment was also prescribed. During the following twenty-four hours no decided change took place. She frequently spoke rapidly and incoherently, but was never violent. On the following morning (Monday), I was disappointed at finding that, though quiet during the night, she had never closed her eyes. This circumstance, coupled with the very rapid pulse, caused me considerable anxiety, although she was perfectly rational and steady in my presence, and did not wander at all. At my evening visit I thought her better; the pulse, however, was as rapid as ever. Wishing to procure sleep, I ordered her a draught, contain-

ing half a grain of morphia; but at 10 o'clock, before this was administered, without any premonitory symptom, she became violently maniacal, and had to be restrained in bed by main force. She was induced to take the draught, but it produced no effect. At 3 o'clock in the morning I was summoned to see her. I found her sitting up in the bed, talking rapidly and wildly, declaring there were rats in the bed, which her friends would not remove. Opium, both alone and combined with antimony, having failed, I next administered chloroform internally, giving 50 drops in a little water, and ordering 30 more to be given in an hour. This seemed to quiet her for a time, but no sleep was procured. At 9 o'clock next morning she was ordered a mixture containing 2 grains of morphia and $1\frac{1}{2}$ drachms of antimonial wine in 8 oz. of camphor mixture; a tablespoonful to be taken every hour: and at noon, no improvement having taken place, two tablespoonfuls were administered for each dose. The whole of this mixture was taken before 9 o'clock P. M., without producing the slightest effect. On visiting her at this hour I found her in as unfavourable a state as ever. She was sitting up in the bed, raving in the wildest manner, and was every moment tossing the bedclothes about, in her efforts to catch the rats and other disagreeable animals which she asserted were under them. She had now passed seventy-five hours without sleep; there was no change whatever in her state, excepting that her pulse was evidently weaker; I therefore decided to try whether any benefit would result from the inhalation of chloroform, determining to give a full opiate when she was brought fully under its influence. I accordingly proceeded to administer it in the usual way. She resisted so violently at first, that it required the united strength of three persons to hold her down. She speedily, however, began to experience its effects, and in a few moments was completely quiet and unconscious. I managed to keep her in a state of deep insensibility for fifteen minutes, when I placed a grain of the muriate of morphia on her tongue, continued the inhalation of the chloroform for half an hour more, and then gradually withdrew it. She still slept quietly, and after a time I left her in charge of the nursetender, with a strict injunction that on no account should she be left for one moment. I had the satisfaction of learning, the following morning, that after I had left she continued in a deep sleep for two hours, when she awoke and attempted to get out of bed, but was easily restrained, and at once fell asleep again, and, with the exception of two short intervals, had slept constantly up to the time of my visit at 9 o'clock A. M. I found her perfectly quiet and rational; her pulse was but 95; she had no headach, and but little thirst; she, however, suffered from pain and griping in the bowels, which were easily relieved by a carminative draught, and from this time she steadily improved, and was soon restored to health. The lochia never reappeared. I have on several occasions tried chloroform in cases of puerperal mania, but never with more than temporary benefit; nor in this instance can we attribute the beneficial

change which took place solely to its administration; but, by giving a large opiate while the patient was in deep sleep, and keeping that state up until the drug had time to produce its effect, the most favourable conditions were obtained for allaying the intense nervous excitement which existed.

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## *The Restoration of Persons apparently Drowned.*

In the twenty-first Number of the Life-Boat Journal we introduced this important subject to our readers, in connexion with a new mode of treatment proposed by the eminent physiologist, the late Dr. Marshall Hall.

Again, in our twenty-fifth Number, we enlarged on the subject, and inserted in juxtaposition the old Code of Instructions, so well known as those of the Royal Humane Society of London, and that proposed by Dr. Marshall Hall; the former of which the National Life-Boat Institution had, until then, circulated through the medium of its life-boat stations on the coasts of the United Kingdom.

We then stated that the Committee of Management of the Institution felt deeply impressed with the very great importance of the subject, to which their attention had been drawn by one of their most active honorary secretaries[a]; and, sensible of the great responsibility incurred by promulgating any system of rules of the efficacy of which the slightest doubt could be entertained, that they had determined to bring the subject, so far as possible, before the medical world, and to solicit the opinions of all medical men and medical authorities, with a view to issuing a new Code of Instructions which the institution might, with confidence, circulate at its stations on our coasts.

In pursuance of this resolution, an appeal was at once made through the medical journals, asking for information, and similar appeals were made by letter to all the principal medical associations and hospitals in the United Kingdom, and to a large number of private practitioners, especially in neighbourhoods contiguous to the sea and to inland waters.

Application was also made, through some of the foreign embassies, for the opinions of the chief medical authorities in foreign countries.

These appeals were in general readily and promptly replied to, and the result is, that the institution is in possession of such a mass of valuable information and expression of opinion, on this interesting and important subject as has, probably, never previously been collected.

Possessed of this information, the Committee have felt justified in acting on it, and, after its being carefully considered in detail, and the several opinions collected compared one with another, they

[a] R. V. Gorham, Esq., Surgeon at Aldborough, in Suffolk.

have caused a new Code of Instructions to be printed, which is now being extensively circulated on the coast of the United Kingdom.

We now place these new instructions before our readers, together with a summary of the information received, so far as concerns the numbers of opinions that have been collected respecting the two methods, which is all that our limited space will admit of. From the latter it will be perceived, that the great majority of medical men are in favour of the new method by Marshall Hall; and by comparing the former with Dr. M. Hall's plan, it will be seen that his method has been altogether adopted in principle, and with but slight modification in detail and in wording.

It will be well, however, for the benefit of our non-medical readers, that we should, in the first place, explain the difference in principle between the old method of the Royal Humane Society and the new one of Dr. Marshall Hall. The one great distinction in principle is, that the old method directed all its efforts to the restoration of warmth and re-circulation of the blood, there being no one part of its rules that had reference to the function of respiration; whilst, on the contrary, Marshall Hall not only insists on restoring respiration, as of vital importance; but he affirms that every attempt to restore and increase circulation of the blood before respiration has been effected is positively deleterious, and must be liable to cause death. In support of his opinion Dr. Marshall Hall quotes the fact so well known to all medical men, that the circulation of the blood generates carbon (termed by the faculty blood poison). That as carbon or charcoal is a product of ordinary combustion, so carbon is produced by that mysterious animal combustion which maintains the heat of the animal body and supports life; but, that remaining in the blood,—that carbon or refuse matter,—would produce asphyxia, and thereby death. That accordingly nature, by the beautiful process of respiration, carries out of the system this carbon or waste matter.

Difference of opinion, we believe, still exists as to the precise time and manner in which this change in or purification of the blood takes place. It will not be necessary here to discuss the same. We may, however, shortly explain that the blood is the medium by which the constant waste of all parts of the body is re-supplied, and its substance and bulk maintained, and by which its heat is supported; that the engine by which this vital fluid is, as by a force-pump, driven through every part of the body is the heart, by the contraction and dilatation of which it is forced through the arteries to every part of the body, whence, at their extremities, it is taken up by the veins and returned to the heart again; that the outgoing stream, the arterial blood, is red in colour, and contains that heat and nourishment which it is its office to impart to the whole system; that the returning stream, the venous blood, is black in colour, deprived of its nutritive property, and impregnated with carbon, which, as above stated, has unfitted it for further use; that it is then handed over to another and separate system of arteries

and veins for its purification, being at once transferred to the pulmonary arteries, which, by their innumerable ramifications, expose it in the lungs to the freshly inspired air, when the carbon, combining with the oxygen of the air, forms carbonic acid gas, which, by each expiration, passes off into the atmosphere, and the blood, thus purified, is carried back to the heart by the pulmonary veins, whence, again red in colour, renovated and re-vivified, if we may use the term, it once more starts on its ceaseless, unwearied round; and thus the wondrous system of life is maintained for its appointed time.

This digression to explain the beautiful connexion between the function of respiration and circulation of the blood, was necessary to convey to those who are not already acquainted with the subject a clear idea of the principle on which Dr. Marshall Hall's theory of restoring life in cases of suspended animation from drowning is founded. As he states, the two functions must act together, being mutually dependent on each other. To restore, therefore, the animal heat and quicken thereby the circulation, without the purifying process of respiration, must produce death. As a rather striking illustration of this truth, he quotes the case of the hybernating animals, which are enabled to exist for a long period without breathing, simply because circulation of the blood is also suspended, and life is at a very low ebb. He quotes also the cases of newly-born infants; and in the cases of still-born infants his method has been most successfully employed. He, therefore, advances as an axiom on the subject, that the greater the amount of vitality the more necessary is the accompaniment of respiration, whilst it is when at its lowest ebb that life may exist, in abeyance, as it were, for the longest period without respiration.

On reviewing the details of the two methods, therefore, the old and new, we find that the former directed the drowned person to be conveyed to the shelter of the nearest dwelling, and then placed in a warm bed, in a warm chamber, and every available means to be then at once taken to restore warmth and promote circulation of the blood, by friction on the skin, hot bricks or bottles, or bladders filled with hot water, &c., applied to various parts of the body, or, in preference to all, when obtainable, immersion in a warm bath. These means were to be persevered in until life was restored, or the case pronounced altogether hopeless. Such was, and we believe is, now the system adopted by the Royal Humane Society of London. It appears, however, that many private practitioners have felt the importance of attempting to promote respiration where suspended, which it has been endeavoured to effect by forcing air into the lungs through a common bellows applied to one nostril. Although, however, instances are recorded of recovery following such treatment, and even that of inflation of the chest by the already vitiated air blown from the mouth of a bystander, yet serious risk was incurred of injuring the delicate tissues of the lungs by the use of such means.

It remained for Dr. Marshall Hall to discover the far closer imitation of natural respiration, which has been already successfully practised in several cases of drowned persons, and in many more instances in the analogous cases of suspended animation in still-born children, which important discovery bids fair to produce a revolution in the treatment of such cases, and to prove an important benefit to mankind.

Having reference to the above-named important principles, Dr. Marshall Hall, then, in the first place, insists that no time be lost; that, instead of removing the body to the nearest house, it should be treated instantly, on the spot, in the open air, by which treatment less time is lost, and a purer air is inhaled than that within a dwelling. In the second place, he requires that the body be placed with the face downwards, in which position the tongue will fall forwards, carrying with it the epiglottis, and so leaving the glottis clear and open for the discharge of any fluids which may have passed into the windpipe, and for the ingress and egress of air to and from the lungs. In the third and last place, he directs that the process of respiration be imitated, by the simple and natural means of changing the posture of the body itself. When placed on the stomach, or with the face downwards, the cavity of the chest is compressed by the weight of the body alone: and Dr. Marshall Hall states that experiments with dead subjects have proved that about twenty cubic inches of air will, in that manner, be exhaled. Also, that by a further steady pressure of the hand on the back, between and below the shoulders, will expel a further quantity of ten cubic inches, or thirty cubic inches in all. That by then placing the body on one side, from the natural elasticity of the framework which encompasses the lungs, a complete expansion of the chest cavity again takes place, and, following a natural law, the outer air once more rushes into, and refills the lungs to the amount of the thirty cubic inches previously expelled. By this truly simple and beautiful operation, an artificial respiration is completely established, the alternate acts of which may be repeated at intervals, the length of which are at the command of the operator. Dr. Hall recommends their being repeated at intervals of four seconds, or fifteen times in a minute: a complete expiration and inspiration thus occupying a period of eight seconds.

Whether this particular rate of alternate movement of the body be the most suitable, or whether it should be the same in all cases, and in all stages of suspended life by drowning, will, no doubt, be shown by the light of further experience.

During the time that the efforts above described are being made to restore the breathing power, Dr. Hall recommends that means be adopted to increase warmth, and restore the circulation of the blood, by friction, drying the body, and clothing it, or by any available means, except the continuous warm bath, which is known to impede breathing. He, however, urges, as of the utmost importance, that these efforts to restore heat, &c., must not go a-head of

the respiratory action, which itself generates heat by the chemical change it produces in the blood.

On perusing the summary of the opinions given by three hundred medical men, and by medical bodies within the United Kingdom, which we now place before our readers, it will be observed that, owing to the short time since its promulgation, only seven have tested the correctness of Dr. Marshall Hall's plan by actual experiments on drowned persons, but that the greater number of twenty-two have done so in the cases of asphyxiated or still-born children. Although the operations have been successful in all the reported cases of both kinds, yet it must be admitted that the proof of experience, especially as regards drowned persons, is as yet but of a limited character. Since, however, the great body of these medical practitioners who have theoretically expressed their approval of Dr. Hall's method have pronounced their opinions in a most emphatic manner, as founded on physiological facts and reasoning, and have stated their intentions to adopt it in future cases; and seeing, from the comparatively small number of persons drowned within reach of the aid of medical men, that a long period would necessarily elapse before any rules founded on long experience could be adopted, we feel assured that the Committee of the National Life-Boat Institution have acted rightly in pronouncing and promulgating rules on this subject for the guidance of uninstructed persons, founded on the opinions thus expressed by so large a number of the members of the distinguished medical profession of this country, backed as those opinions also are by the continental authorities who have kindly favoured the institution with their opinions on the relative merits of the old and new methods.

Referring to the opinions of foreign authorities, it may be stated that although Dr. Marshall Hall is known to them by his writings, and has a European celebrity as physiologist, they do not appear to have heard of his proposed system for restoring drowned or other asphyxiated persons. They have, therefore, only pronounced theoretically on the subject; affirming the correctness in principle of his method, and generally adding that if his manner of restoring respiration by postural action only should be proved by experience to be as effectual as the Doctor anticipated, it would be an invaluable acquisition to medical knowledge.

With reference to the opinions received from the Board of Public Health at Paris, we may observe that, whilst that Board approves of the principles advocated by Dr. Marshall Hall, it states that the necessity of restoring respiration has been for a long time known and acted on by their medical authorities, but their mode of effecting it differed from that of Dr. M. Hall's.

Opinions of medical men and medical bodies in the United Kingdom on the comparative merits of the two methods of restoring drowned persons, viz.—that of the Royal Humane Society and that proposed by Dr. Marshall Hall:—

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| Total number of replies received (of whom eleven sign as representing medical bodies), | 300 |
| Total number of the above which are altogether in favour of Dr. M. Hall's plan, | 254 |
| Number in favour of the plan of the Royal Humane Society, | 10 |
| Number who recommend the addition of some of the Royal Humane Society's rules to those of Dr. M. Hall, | 20 |
| Number whose replies are undecisive, | 12 |
| Number who decline to offer an opinion, | 4 |
| Number who have successfully practised Dr. M. Hall's plan on drowned persons, | 7 |
| Number who have successfully practised Dr. M. Hall's plan on still-born children,—some of them in several instances, | 22 |

NEW DIRECTIONS TO RESTORE THE APPARENTLY DROWNED.

1. Treat the patient instantly, on the spot, in the open air, exposing the face and chest to the breeze, except in severe weather.

*To clear the Throat.*—2. Place the patient gently, face downwards, with one wrist under the forehead, in which position all fluids will escape by the mouth, and the tongue itself will fall forwards, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth. If there be breathing—wait and watch; if not, or if it fail, then—

*To excite Respiration.*—3. Turn the patient well and instantly on the side, and—

4. Excite the nostrils with snuff, hartshorn, volatile salts, or the throat with a feather, &c., and dash cold water on the face, previously rubbed warm. If there be no success, loose not a moment, but instantly begin—

*To imitate Respiration.*—5. Replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress.

6. Turn the body very gently on the side and a little beyond, and then briskly on the face, alternately, repeating these measures deliberately, efficiently, and perseveringly, about fifteen times in the minute, or every four seconds, occasionally varying the side. [By placing the patient on the chest its cavity is compressed by the weight of the body, and expiration takes place; when turned on the side this pressure is removed, and inspiration occurs.]

7. On each occasion that the body is replaced on the face make uniform but efficient pressure, with brisk movement on the back between and below the shoulder-blades or bones, on each side, removing the pressure immediately before turning the body on the side. [The first measure increases the expiration, the second commences inspiration. The result is respiration or natural breathing, and, if not too late, life.]

8. After respiration has been restored, promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet.

*To induce Circulation and Warmth.*—9. During the whole time do not cease to rub the limbs upwards, with firm grasping pressure and with energy, using handkerchiefs, flannels, &c. [By this measure the blood is propelled along the veins towards the heart.]

10. Let the limbs be thus warmed and dried, and then clothed, the bystanders supplying the requisite garments.

*Caution.*—1. Send quickly for medical assistance, and for dry clothing.

2. Avoid all rough usage and turning the body on the back.
3. Under no circumstances hold up the body by the feet.
4. Nor roll the body on casks.
5. Nor rub the body with salts or spirits.
6. Nor inject tobacco-smoke or infusion of tobacco.
7. Avoid the continuous warm bath.
8. Be particularly careful to prevent persons crowding around the body.

*General Observations.*—On the restoration of life a teaspoonful of warm water should be given; and then, if the power of swallowing have returned, small quantities of wine, or brandy and warm water, or coffee. The patient should be kept in bed, and a disposition to sleep encouraged.

The treatment recommended should be persevered in for a considerable time, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance, cases having been successfully treated after persevering several hours.

The leading principles of the above instructions are those of the late Dr. Marshall Hall for the restoration of the apparently dead from drowning.

In conclusion, we may state that the Committee of the National Life-Boat Institution will be gratified to be the vehicle for collecting any information which further experience may develop on this important subject, and they will feel indebted to all medical men and others who may have opportunities to test the new Marshall Hall method, if they will communicate the results of the same to the Institution.—*Journal of the National Life Boat Institution.*

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## *Case of Poisoning with Hachisch.* By PROFESSOR K. D. SCHROFF.

I FEEL for many reasons induced to publish the following case of poisoning with hachisch. Some consider *Cannabis Indica*, and all its preparations, to be but little dangerous; and many are inclined to award them a place rather among luxuries than among poisons. But indeed the idea of what entitles a substance to be referred to either the former or the latter category is so uncommonly elastic, that we do not hesitate to class at will a great number of things at one time among luxuries, at another, among poisons. Thus von Bibra, in his excellent work on the Narcotic Aliments, has not

scrupled to adopt arsenic among the number; and according to the interesting researches of Falk on Caffeïn, no toxicologist can henceforth be found fault with if he transfers coffee and tea, and, in short, all parts of vegetables containing caffein, to toxicology, inasmuch as this alkaloid evidently possesses poisonous properties, for it has long been known that very concentrated infusions of tea and coffee are capable of producing phenomena of poisoning. Numerous as are the communications on record in reference to psychical alienations produced by the preparations of hachisch, accurately described cases of intoxication by this drug, to the degree of endangering life, are still to be supplied. I should wish, by the recital of the following case, to spare any who, in the belief that hachisch is scarcely to be looked on as a dangerous remedy, might thoughtlessly give it in large doses, in whatever form it may be imported from the East, the terror and anxiety its employment caused me.

I had already, many years before, in consequence of several experiments made both with the infusion of the herb Cannabis Indica, brought from the East, and with its different preparations, especially with various kinds of hachisch, and with the alcoholic extract of the plant, as also with both the *Cannabis Indica* and *Cannabis sativa* cultivated in this country, been convinced from most of the trials of this remedy that, on the one hand, not only the different preparations and the difference of locality where the plant had been cultivated, but also the mode of preservation, and especially the difference in age of one and the same part of the plant, and the time of preservation of one and the same preparation, essentially influenced its activity; and that, on the other hand, the individuality of the person experimented on played a very important part in determining the effects of the remedy. If the latter proposition be more or less true of all substances acting on the nervous system, but especially on the brain, and is, therefore, particularly to be observed of narcotics; there is among the last-named substances, according to my experiments with them—most of which were tried on the same individuals—no other substance of which it is so true as of *Cannabis Indica*, and all its derivatives; a fact I have already pointed out in my Lehrbuch der Pharmakologie, pp. 491–95.

In the autumn of 1856 a consignment of various kinds of hachisch, addressed from Bucharest by the apothecary there, Dr. Steege, to Dr. G. Martius, reached Vienna; and from the latter gentleman I obtained permission to take as much of each variety as I should find necessary for my objects, of which permission I moderately availed myself. I determined to subject the specimens to physiological experiment, inasmuch as they differed in their external appearance from the sorts of hachisch I already possessed, and which I had previously tried. Among them was a preparation bearing the name of "Birmingi;" while on the label of the glass containing it was marked "macht Keif (that is, produces laughter), 10 gran." From this superscription I could infer nothing else

than that, in the East, they were accustomed to take the preparation in ten-grain doses, and that this quantity threw those who took it into an agreeable frame of mind, and produced laughter.

The preparation belongs to the solid varieties of hachisch; is in the form of tablets, which are very hard and difficult to break; externally it is coloured almost black, and is smooth; on section, or on the under surface, it presents in the centre a dirty greenish-gray colour; it has an uneven fracture; its smell is very slight, it is only from the fresh surface of fracture that an odour calling to mind that of the herb of the *Cannabis Indica* is obtained; the taste is neither bitter nor aromatic, but rather insipid; on prolonged mastication the very tough mass becomes gradually pappy, and eventually dissolves in the saliva, leaving a crumbling solid substance; irritation of the throat also ensues when the drug is chewed for a long time. This species is, therefore, essentially different from that imported from Egypt, with which I had instituted several experiments, and which I have more accurately described in my "Pharmakognosie," page 130; but it differs still more from the soft varieties of the drug.

Of this "Birmingi," Dr. Heinrich—who had fully tried most narcotics, and in my former experiments on *Cannabis Indica* had taken several preparations of this drug without manifesting any particular susceptibility of them, but rather always served as a check if more violent effects had occurred from narcotics in other individuals, when a steady excitability constantly manifested itself in him—took ten grains at half-past 5 in the afternoon of the 6th of May, in the present year. He chewed this quantity for about an hour, during which it gradually dissolved and was swallowed; only the insoluble solid residuum, amounting to about two grains, was spit out. Irritation of the throat, eructation, and slight nausea ensued. The attempt to smoke a cigar in the open air had to be given up, on account of dryness and roughness in the throat. Dr. Heinrich took a walk in the town, and inspected the print-shops and play-bills without perceiving any change in himself. At the end of an hour and a half, that is, about 7 o'clock, he met an acquaintance, to whom he talked all kinds of nonsensical trash, and made the most foolish comparisons; from this, everything he looked at seemed to him ridiculous. This condition of excitement—in which his face and eyes got redder and redder, the subjective heat of the body considerably increased, and the feeling of facility of motion became constantly more distinct—lasted about twenty minutes. Suddenly a great degree of sadness came over him; everything was too narrow for him; he acquired a disturbed appearance, became pale; his sadness increased to a feeling of anxiety, accompanied by the sensation as if his blood was flowing in a boiling state to his head; the feeling as if his body was raised aloft, and as if he was about to fly up, was particularly characteristic. With the oppression of the chest was combined a sensation of compression and tightness in the præcordial region. His anxiety and weakness

overcame him to such a degree that he was obliged to collect all the power of his will, and his companion had to seize him firmly under the arm, in order to bring him on, which was done in all haste, as he feared a new attack, and wished, if possible, first to reach a place where he could be taken care of; but in the course of three minutes, while he was still walking, the attack set in with increased violence. It was only with great difficulty he reached the Pharmacological Institute; here he immediately drank two pints of cold water, and washed his head, neck, and arms with fresh water, on which he became somewhat better. The improvement, however, lasted only about five minutes. He sat down on a chair, and unfortunately (as he observes in his Report) felt his pulse, which he found to be very small and slow, with very long intervals. He was no longer in a state to take out his watch to ascertain more exactly the frequency of his pulse, for the feeling of anxiety came over him again, and with it he traced the premonitory symptoms of a new and violent attack. He was brought into the adjoining chamber, stripped himself partly of his clothes, and gave over his things, directing what was to be done with them after his death, for he was firmly convinced that his last hour had struck, and continually cried out, "I am dying; I shall soon be undergoing dissection in the dead-room." The new attack was more violent than the former were so that the patient retained only an imperfect degree of consciousness, and at the height of the paroxysm even this disappeared. After the fit, too, consciousness returned but imperfectly; only so much remained in his recollection that the images which rose within him constantly increased in ghastliness until they gave way to the unconscious state, and that gradually, with returning consciousness, less formidable figures appeared in their stead. Subsequently he stated that it appeared to him as if he were transported from the level surface to a hill, thence to a steep precipice, thence to a bare rock, and lastly to the ridge of a hill, with an immense abyss before him. From this time he could no longer control the current of ideas following one another with impetuous haste, and he could not avoid speaking uninterruptedly until a fresh attack came on, which quite deprived him of consciousness for some minutes.

At this time (a quarter-past 8) I was called to Dr. Heinrich, and did not leave him until all danger was over. Before I report my observations, I shall let him describe his own case:—

"The flow of my ideas had now free course, and notwithstanding my great loquacity, I could utter only a few words of what I imagined. All my thoughts and deeds from my childhood came into my mind. I believed that I had, although imperfectly, spoken out my whole character. The fear of dying no longer indeed laid hold on me to the same degree as before; yet I remember to have said that they should leave me, for what and as I then was, I should be always. The senses of sight and hearing were unimpaired, for when I opened my eyes I knew all those who were standing about me, and equally recognised them by their voices when my eyes were closed;

and I answered what they said in some suitable words, without connecting the latter, as my speech was soon subordinated to my fertile imagination. I cannot recollect the moment when Professors Brücke and Schroff came to me; neither did I know that sinapisms were applied to me, and that my feet were rubbed with brushes. It was not until the second day that I perceived this from the sore spots on the back of my left foot: the sensibility of my skin was much blunted. Nor can I recollect when the severe rigor occurred which was observed in me after the last most violent attack. The urine I could not retain; it passed involuntarily from me. Towards 10 o'clock—that is, four and a half hours after the seizure—the storm was somewhat allayed; I obtained the control over my imagination, ceased to speak incessantly, and traced some pain in the præcordial region, in the place where irritants had been applied. At this time *café noir*, with lemonade, was brought; which I remember, though I cannot state the time when it took place. The flow of my ideas was too rapid, and I therefore thought that it was already very late. The time given above I state only according to what I was afterwards told; for I am not in a position to form an opinion as to the time and duration of the paroxysms. During the night I drank a great deal of lemonade, and another cup of *café noir;* nevertheless, sleep fled from me, for my imagination was constantly at work. I was obliged to pass water several times, which at first took place not without difficulty. Next morning I dressed, and had myself brought home, but could not set to my usual daily work, because, notwithstanding the greatest effort, I could not collect my scattered thoughts; and I also felt corporeally too weak. I was, therefore, obliged to take to bed, where I remained until the morning of the third day. During this time I drank four pints of lemonade, and took soup only twice, as I had no appetite. On the third day I had myself led about, supported by a second person, but was still rather confused and giddy. This day, also, for want of appetite, I ate but little, but still drank lemonade. I passed urine without difficulty; perspiration did not take place; the bowels had not acted for three days. During the second and third nights my sleep was tranquil. On the fourth day I felt well again; regained appetite; my strength increased; my appearance became less unsettled. Nevertheless, walking about for half-an-hour tired me very much. The depression which came on after the excitement gave way only gradually. On account of constipation I had, on the third day, taken a Seidlitz powder; but except the discharge of flatus this produced, it had no effect; it was not until I had, on the fourth day, swallowed two Seidlitz powders, that several motions took place."

As has been stated above, I saw the patient at a quarter-past eight. He recognised me immediately, as well as all those about him whom he saw and heard. I found him lying in bed; his face red, as in health; the cheeks rather hollow; the pupils moderately dilated, but the iris sensitive to the stimulus of light; the eye-ball

moved freely; the lustre of the eyes was unchanged; the conjunctiva of the globe was somewhat congested; the forehead was cool; even after the removal of the cold applications which had been used, the forehead and head were only moderately warm, never hot. The carotid and temporal arteries pulsated feebly and more slowly than in the normal state; the pulsation of the heart was very weak, and sometimes scarcely perceptible; the pulse at the wrist often stopped for a minute and more, and when it returned it was uncommonly weak, and only perceptible when carefully sought for; subsequently it became more distinct (at intervals of from ten to fifteen minutes) and more frequent, and rose to 78, which, for the patient, whose pulse in its normal condition was from 58 to 60, was tolerably quick. These variations in the pulse, with which the action of the heart and of the carotid and temporal arteries corresponded, were repeated frequently within an hour; the respiration was low; in other respects it was regular. The abdomen was somewhat tympanitic, otherwise it, as well as all other parts of the body, was free from pain; the extremities, both upper and lower, were cold, sometimes tremulous; they were movable in every direction, and were obedient to the influence of the will; the skin was insensible to stimulants, as sinapisms and brushes. The patient could sit up, and drank without difficulty what was offered to him. On my asking him if he did not wish to pass water, he said to me softly, "The urine passes in the bed." All the organs of sense discharged their functions normally, except that the sensitive power of the skin was blunted.

When the patient perceived and recognised me, he manifested joy, it is true; but the idea that he must die, and soon be dissected, predominated long, and he spoke only of it, and took leave of those present. By continued conversation, and the introduction of harmless jokes, we succeeded, however, in drawing him from this idea, and leading him into conversation, when he very soon became cheerful, even joked about himself and others, talked incessantly, communicating the most secret thoughts of his heart, and could not refrain from expressing what he thought of others. Only occasionally did the current of ideas which he could not control overcome him to such an extent that he lost consciousness, so far as not to mind anything about him, not to answer questions or remarks addressed to him, losing himself in a disordered train of thought. However, this state lasted only some minutes, and the power of observing and rightly estimating external impressions again returned. The notion that he must die came back, however, sometimes, and always bore such an intimate relation to the sinking and disappearance of the pulse, that from the commencement of the latter phenomenon, I could with certainty reckon on the invasion of the thoughts of death, and, *vice versa*, from the manifestation of the latter idea, I could anticipate the fall of the pulse. It seemed in the current of uninterrupted speaking, that the mass of ideas and images pressing on one another in the most

rapid succession was much too great to admit of the possibility of their being clothed in words. Out of the chaos of ideas the notion often rose that our condition shall be eternal. He was also much occupied with the thought that he knew not whether he existed, or whether man in general existed, or for what purpose he existed. He acknowledged that it was impossible for him to keep anything secret, and stated that he could, therefore, not avoid exhibiting his character as it really was.

When the servant rushed breathless into my room, and summoned me to Dr. Heinrich, who, he said, was dying, my first idea was that other narcotics or acrid poisons besides *Cannabis Indica* must be contained in the Birmingi to have produced such violent indications of poisoning; for it did not appear to me to be probable that Indian hemp should, in the dose the patient had got, give rise to such severe symptoms. My mind was, therefore, very much eased to find, as I at once inferred on investigating the patient's state, that neither any other narcotic nor acrid poison was in operation; for neither opium nor any of its active constituents could be contained in the preparation, as the symptoms of opium-poisoning, such as they must have manifested themselves with this enormous depression of the action of the heart and vascular system, in deep coma, with stertorous and slow respiration, were absent. Nor could belladonna, stramonium, or hyoscyamus have been mixed with the Birmingi, as the essential phenomena belonging to these three narcotics—enormous dilatation of the pupil, even on exposure to a very dazzling light, unusual dryness of the organs of deglutition, hoarseness, raging delirium, or coma, the peculiar character of the pulse indicative of the ingestion of those narcotics—were wanting. Still less was there reason to suspect that tobacco, hemlock, digitalis, aconite, or cantharides—which, it is said, are sometimes added to hachisch to excite the sexual organs—had been taken, as the symptoms characteristic of these drugs were absent. For though individual phenomena, as the extremely depressed action of the heart and vessels which are among the effects of the last-named narcotics, existed, yet the other symptoms were not observed; and the symptom which is common to both was so far distinguished, as digitalis and aconite produce a constant retardation of the pulse, lasting several hours, with occasional intermission of the beat, while here this condition alternated with increased frequency; not to mention the so characteristic exaltation of the cerebral functions, which latter, in cases of poisoning with digitalis and aconite, either remain quite unaltered, or manifest only extremely inconsiderable alienations. The absence of all phenomena appertaining to inflammation of the urinary organs was conclusive against the idea of poisoning with cantharides. Nothing, therefore, remained but to attribute the entire group of symptoms to the administration of hachisch, consisting exclusively of Indian hemp.

The characteristic feature of the above case of poisoning with hachisch consists in the extreme and persistent depression of the

action of the heart and entire vascular system; and in the simultaneous lowering of the feeling of life, and the consequent fear of death, after the previous stage of excitement had lasted but a short time. The stage of depression alluded to is also characterized, however, by the absence of tendency to sleep, and by its long duration, in which this case differs from all the experiments I had made with Indian hemp and its preparations. In this respect this case contrasts directly with that I have communicated in my "Lehrbuch der Pharmakologie," where a concentrated infusion of *Cannabis Indica* had given rise to an extremely acute and uncommonly intense attack of insanity, with destructiveness; which, however, quickly passed off, without leaving behind it any great depression; for even on the next day the person experimented on having had a good night's sleep felt perfectly well; while in Dr. Heinrich's case, the first night was wholly sleepless, and very considerable muscular debility, with determination to the head, continued until the third day. But it agrees with all our experiments and observations in this, that no trace of convulsion was manifested, for the slight degree of tremor which was present cannot be regarded as convulsion, inasmuch as the free influence of the will continued undisturbed, even in the limbs affected with tremor. However, convulsions occur very rarely, though there is no lack of observers who make mention of such, and even of cataleptic fits, after the use of hachisch. The above two cases, therefore, illustrate, in a remarkable degree, these two stages of intoxication—the stage of exaltation predominating in the one, and that of depression in the other.

Further, the case above communicated affords a fresh support to the view that Indian hemp, and the preparations derived from it, in general far exceed every other of the agents hitherto known which are more nearly connected with the cerebral functions in their immediate action on the imagination. With no other phrenic agent does the mental self-consciousness, the psychical coenæsthesia, the spiritual self-contemplation, come forward so freely as with this; with none does the current of the inner ideal world break forth so powerfully and impetuously as here, without the possibility of attending to external excitement, and the corresponding reaction being removed. In a person intoxicated with alcohol, opium, &c., there is, in the stage of exaltation, an increase of the bodily coenæsthesia; but only exceptionally, and for a very short time, does this amount to internal contemplation, and it very soon passes completely into the stage of depression. With Indian hemp, the clear, reflective insight, the self-contemplation, occurs as a persistent, essential effect, which is even still maintained when, with respect to the body, activity in all irritable forms is much diminished. And thus is explained the very great variety which exists in the psychical phenomena, according to the difference in the peculiarity, in the special psychical character, in the degree of spiritual development and the occasional disposition of the mind and humour of the individual; as well as, on the other hand, according to the

degree of material change produced by the poison. Hence the eastern Mahometan, who yields himself wholly to the sensual enjoyment of love, passes into the most voluptuous fancies; while the physician and psychologist, inclined to reflection on his bodily and mental existence and action, more closely examines and dissects his corporeal and mental organism.

The same variety of action, thus manifested in the physiological, is also specially exhibited in the pathological condition. Thus, I have seen patients take from one to ten, or, in one case, even so much as thirty grains of the alcoholic extract of *Cannabis Indica* in the course of an evening and night, sometimes within a few hours, without producing any particular symptoms, except some determination to the head; even the so much wished-for sleep, on account of which the remedy was taken, was not obtained;—while, in other cases, one grain of the same preparation, from the same source, produced violent symptoms bordering on poisoning—delirium, very rapid pulse, extreme restlessness, and, subsequently, considerable depression. I must, therefore, in conclusion, repeat the opinion I expressed at the commencement of this paper—in support of which the Members of the Society present, to whom I orally related the above described case, quoted numerous proofs from their practice—that Indian hemp, and all its preparations, exhibit the greatest variety in the degree and mode of action, according to the difference of individuality, both in the healthy and diseased condition; that they are, therefore, to be classed among uncertain remedies; and that the physician must, in every instance, use them with great caution.—*Wochenblatt der Zeitschrift der kaiserl. königl. Gesellschaft der Aerzte zu Wien*, October, 1857, p. 641.

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*Note on the Physiological Fatty Liver.* By Dr. W. BERLIN.

KÖLLIKER has recently made a communication in the "Verhandlungen d. phys. med. Gesellschaft zu Würzburg," Bd. vii., p. 174, 1856, on the occurrence of a fatty liver in sucking animals and children, which is said to be normal. Though the pathological fatty liver is often combined with increase of volume and other phenomena, I have nothing against calling the condition observed by Kölliker physiological fatty liver, provided that by the term we understand nothing more than what we actually see, an abundant amount of fat in the hepatic cells.

I had an opportunity of repeating, and, I may add, of confirming, Kölliker's observations.

A young Cervus aristoteles recently died in the Zoological Garden twenty-four hours after birth, during which time it had copiously sucked.

I had the opportunity of examining its liver, and even externally saw in different situations more or less bright whitish-yellow spots, which foreshowed what we should find. The hepatic cells were abundantly filled with fine granules and larger drops.

But this observation was not new to me, neither were those communicated by Kölliker. In fact, I had in the summer of 1851 seen this physiological fatty liver in a child.

Dr. Lehmann was so good as to invite me at that time to the dissection of the bodies of children, which had died in his clinique, and we met, in examining a liver, so beautiful a specimen of loading of the hepatic cells with fat, that their origin was quite evident. Thus we repeatedly found forms closely resembling those of milk, so that, in the enthusiasm of the moment, I did not hesitate to cry out: "See, there is milk in the liver." Although this expression may have been rather strong, yet there is no doubt that with the phenomenon we at the same time recognised its cause. The history of the case and the appearances on dissection confirmed our supposition in every respect. I regret that I took no notes of this case, and can, therefore, not state any further particulars about it.

During the summer and autumn of 1856 I had subsequently many opportunities of dissecting the bodies of children with Dr. Lehmann, but without again finding such appearances. This admits of an easy explanation if we recollect that most children which die in the Lying-in Hospital have for some time been sickly, and have wholly or in part refused milk diet, and that in general their digestion and absorption have been deranged.

Kölliker appends to his observations the question, how the fat reaches the liver, whether directly through the blood or by means of the lacteals. He considers the latter to be the more probable mode. His reasons for holding this view are, however, not conclusive, and so long as the opposite is not proved, I should hold the former to be not improbable.[a] I can, however, not speak more fully on this subject, nor on the interpretation of this deposition of fat in the liver, of which Kölliker treats, as I can contribute neither fresh observations nor experiments bearing on the point. This alone I would assert, that the fat must either be employed in the formation of bile, or be removed by the hepatic veins from the liver. In any case experiments would be instructive.—*Archiv für die Holländischen Beiträge zur Natur und Heilkunde*, Band i., Heft 1 und 2, p. 100.

[a] We must, however, remember that the lacteals do not act before birth or during intra-uterine life; that, consequently, absorption does not take place in the intestinal canal, at least through the lacteals. A comparison of the lymphatic glands in the mesentery before birth, with those of children who have lived sometime, will be sufficient to show this. But there are still other reasons which I cannot here discuss. Is there, however, anything improbable in assuming that the first milk is in great part taken up by the blood-vessels? And if this occurs, may it not also happen later? An examination of the absorption in the intestinal canal of young sucking animals and children of different ages, would, however, solve this question, which so long awaits a satisfactory answer.

*On Acute Fatty Metamorphosis of the Muscular Substance of the Heart in Pericarditis.* By RUD. VIRCHOW.

STOKES, in his monograph on Diseases of the Heart and the Aorta (Lindwurm's translation, Würzburg, 1855, p. 246), has devoted a special chapter to the subject of weakness of the heart in pericarditis, and in connexion with it has particularly discussed the question, how far this weakness depends on a contemporary myocarditis, as it is sometimes observed. However, he leaves the matter undecided. Rokitansky (Pathol. Anat., Wien, 1856, bd. ii., p. 234) describes only changes of the heart in pericarditic effusions of long standing. The same is the case with Bamberger (Lehrbuch der Krankheiten des Herzens, Wien, 1857, p. 109).

My attention was particularly drawn to this subject by a case of hemorrhagic pericarditis, which had during life, in consequence of its extremely unfavourable course, most anxiously occupied me. On the 12th of February, 1857, a man aged twenty was admitted into my division in the Charité, who had for five days suffered from violent acute articular rheumatism (affecting both knees, the left foot, both hands, and both shoulder joints), and who, at the time of his admission, presented an unusually quick pulse, profuse perspirations, and great oppression. Notwithstanding repeated examination of the heart, it was not until the second day after his admission that I discovered frottement, while at the same time a peculiar change had taken place in the pulse, the tension of the latter being very much diminished, and a very slight after-stroke following with great rapidity every third or sixth pulsation. From that time the uneasiness of the pale and suffering patient by night and day increased: attacks of violent palpitation of the heart with great oppression supervened; the pulse became weaker and more irregular, the urine contained albumen, finally delirium came on, and the sufferer died in a condition of extreme dyspnœa, which was during the last few days increased by a capillary bronchitis. The entire course of the disease, which occurred in a hitherto apparently healthy man, amounted to seventeen days, the duration of the pericarditis to ten.

The autopsy confirmed my suspicion that with the pericarditis an essential disease of the muscular substance of the heart had taken place in a, so far as I have been able to find, hitherto undescribed mode. The pericardium contained a thin, blood-red fluid to the amount of 16 cubic centimetres (about $9\frac{1}{4}$ fluid ounces), in which, however, the microscope no longer showed any blood corpuscles, but rather indicated the occurrence of cadaveric changes in the presence of long vibriones, the development of ammonia, and, perhaps, also the small amount of leucin. The surface of the pericardium was very rough from thick layers of fibrin, which could not be separated from its wall without violence. The fleshy substance of the heart in general appeared flaccid, pale, and somewhat spotted, but on more accurate examination it was seen that under

the whole extent of the pericardium the outer layer of the muscular structure had assumed a pale-yellow opaque appearance. The thickness of this layer amounted to from one to one and a half or two lines, and it was particularly distinct when a thin section treated with acetic acid was pressed between two glasses, and observed with transmitted light. Microscopic examination showed that within this layer all the primary fasciculi had undergone such complete fatty metamorphosis that not the least trace of the internal structure could any longer be recognised. As we went more deeply, this metamorphosis gradually diminished, but there was no part of the fleshy structure of the heart which was wholly free from fat granules in the interior of the primitive bundles. Towards the surface increasing layers of connective tissue were met, which passed into the thickened pericardium and the apparently fibrinous layers, and which were full of numberless, densely compressed nuclear and cell masses contained in compartments. I may add, that corresponding to slight valvular sounds heard during life, slight recent morbid conditions of the edges of the valves were everywhere found.

Soon after, the body of a man was brought for dissection, who had died quite suddenly at another station, and in whom the autopsy revealed a purulent pericarditis not suspected during life. In this case the outer stratum of the muscular substance exhibited the same change. On the other hand, this was wanting, or was very little advanced, in many other cases, whether slighter or similar, in which the pericaditis was only a complication of other more severe affections. It seems to me, therefore, that there is scarcely any doubt that this peculiar fatty metamorphosis penetrating from the periphery inwards is caused by the pericarditis, and that it is precisely this which produces the weakness and paralysis of the muscular structure of the heart, which menace the patients with the greatest danger to life. It is directly opposed in situation to that (chronic) fatty metamorphosis, which is met with in dilatation of the cavities of the heart, and is also accompanied by weakness; this begins, in the first place, in the endocardium and usually more in spots, being distinguished by this latter circumstance from the more uniform fatty loss of colour of the inner fleshy layers, such as occurs in old people.

It is not my intention on the present occasion, to mention all the possible varieties of fatty metamorphosis of the heart. I have designedly confined myself to those less known forms of partial but extensive metamorphosis which belong to the inner and outer periphery of the organ. Of these, those adjoining the endocardium in general belong to chronic processes, while those described as under the pericardium are manifestly of acute inflammatory origin. This is the less doubtful, as myocarditis, both of the rheumatic and of the suppurating form, attends fatty metamorphosis of the muscular structure of the heart, as I already stated on a former occasion. —(Archiv. iv., p. 270, 273.) This is most beautifully seen in the

embolic softening (Gesammelte Abhandl., p. 715), where, in general, the layer adjoining the obstructed artery exhibits a granular softening (decay, detritus), while the next and more external manifests the most beautiful fatty metamorphosis. That the inflammatory irritation is capable of propagating itself from the pericardium to the endocardium, Desclaux has experimentally shown (Gesammelte Abhandl., p. 527); and that it is exactly the hemorrhagic pericarditis which, with peculiar ease, gives rise to such complications, is shown, in addition to the extremely instructive case communicated by me (Ges. Abh., p. 410; Archiv i., p. 316), and by M. Salter's observation (Lond. Med. Gaz., Jan. 1839,) quoted by Hasse (Pathol. Anat., i. p. 153), and in which purulent softening of the muscular substance, especially of the left ventricle, and probably inflammatory depositions of fibrin, are said to have been found within the cavities of the heart.

It appears to me to be a particularly important question for further observation, under what circumstances pericarditis is complicated with a morbid condition of the deeper structures of the heart. Experience shows that this happens particularly in cases in which the heart's action has very early become unusually rapid. It is precisely those cases of acute articular rheumatism in which the "fever" has early attained a great height, that offer the greatest danger. Should we not infer that it is the increased action of the heart which disposes it to disease, and that the same obtains for the muscular structure, which I have endeavoured to point out in reference to the endocardium (Ges. Abh., pp. 505–509). Experience further shows, that the treatment which most quickly allays the increased action of the heart, and produces the greatest amount of muscular quiet, is that which has the greatest influence on the result. Everything, therefore, indicates that the mechanical element, both etiologically and with reference to prognosis, occupies the first rank, but it would be extremely desirable that more accurate observations should be directed to ascertain to what degree the more exact analysis of the phenomena may decide the practice of the physician. For, in such cases it is of vital importance quickly to adopt the really curative mode of treatment, as delay must always be attended with an increase of the organic disturbance, and paralysis of the heart may occur on sudden excitement, when we have succeeded in diminishing the frequency of the pulse.—*Virchow's Archiv*, New Series, Bd. iii., Heft 2 and 3, March 1858, p. 266.

*On the Employment of Chloroform in the Examination of Flour mixed with Mineral Substances.* By M. J.-L. LASSAIGNE.

THE uses of chloroform in isolating some principles soluble in it, has already been pointed out in several cases of proximate analysis of certain parts of vegetables. In like manner this product has been employed in certain inorganic or mineral analyses.

Since the publication of these facts, of which chemists and pharmaciens have been able to make practical application, I have been informed by a distinguished pharmacien of Charleville, M. Cailletet, formerly intern in the Paris hospitals, that the use of chloroform has been extended to the analysis of the farinas of the Cerealia, or of other varieties of flour suspected of being mixed with mineral substances.

On a journey which I had occasion to make to Charleville, in the month of January last, M. Cailletet, with whom I was associated in a judicial investigation, communicated to me his results, and kindly exhibited to me this action of chloroform on pure farinas, and on farinas mixed with mineral substances. A great number of the latter are naturally not only insoluble in this fluid, but they possess generally a greater density than it does; it is therefore on this property that M. Cailletet has based the equally simple and ingenious method which he has employed to discover even the ten-thousandth part of mineral matter mixed with a specimen of flour. The density of the farinas being much less than that of chloroform, it is evident that they will be easily separated from the matters heavier than this fluid interposed between the particles of farinas.

This operation is, in some measure, a mechanical proceeding, which causes all the farinaceous molecules to rise above the chloroform, while the foreign mineral matters are deposited at the bottom of the fluid which occupies the space intermediate between the former and the latter.

A tube of glass or crystal, about an inch in diameter, and six or eight inches long, which is closed hermetically, in order to mix the chloroform thoroughly with the farina submitted to experiment, is conveniently adapted to this operation.

One or two drachms of the suspected farina are introduced into the test tube; chloroform is poured over the farina so as nearly to fill the tube; the latter is closed, and shaken for some time.

After a repose of longer or shorter continuance, according to the temperature of the place in which the experiment is carried on, the tube being placed in a vertical position, the separation is effected: the lighter farina occupies the upper part, and below the layer of chloroform at the bottom of the tube are collected the foreign matters which were mixed with the flour.

It is by means of this simple plan that M. Cailletet has been able to isolate directly either very small quantities of arsenious acid in powder mixed with flour, or alum in fine powder, or any other

mineral substance. The sand or debris of the millstone, which might accidentally be mixed with the flour, would thus be isolated without the necessity of having recourse to the incineration of the flour itself, as is practised in the examination of farinaceous matters.

The ulterior examination of the matters separated from farina by chloroform is then very simple : the chloroform is decanted to collect the deposit formed in it; the latter is dried on tissue paper, and nothing remains but to investigate its physical and chemical properties according to the methods employed in laboratories, and which are daily employed by chemists.

This new method, for which science is indebted to M. Cailletet, will doubtless find more than one application in scientific researches, and perhaps in the industrial arts.—*Annales d'Hygiène publique et de Médecine légale*, 1858, p. 199.

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*Case of Absence of the Left Kidney.* By PROFESSOR FÖRSTER.

THE malformation in question was found in the body of a boy still-born at the seventh or eighth month, brought to me from the Lying-in Hospital on the 18th of June, 1857, which exhibited no other anatomical abnormity. The left kidney, with the ureter belonging to it, was entirely absent; the place where the kidney should have lain was occupied exclusively by the intestine, the left suprarenal capsule was in its proper position, and exhibited no change, except that it was larger than the right. The right kidney occupied its normal situation, and appeared rather larger than usual, the calyx and pelvis being somewhat enlarged, in other respects its structure was exactly that of a single kidney. Nor did any trace of the fusion of two kidneys exist; the right ureter was greatly enlarged, ran in a winding course behind the lower extremity of the colon, which was filled with meconium, and opened on the left side into the bladder, exactly in the place where, in the normal condition, the left ureter usually comes down; the caliber of the ureter at this point was very narrow, and would admit of the introduction of only very fine probes; by this circumstance, but still more by the pressure which the colon must have exercised on the ureter, the dilatation of the latter was accounted for. The urinary bladder was considerably distended with urine, which, on pressing the bladder, very readily flowed from the normal urethra; where the right ureter should normally have entered the bladder, there was no trace of it. The testicles still lay within the abdominal cavity, but were very near the entrance into the inguinal canal.

Absence of one kidney, and of the ureter belonging to it, is a malformation frequently observed, but the remarkable course of the right ureter to the left side, and its opening into the left half of the bladder, is one of the greatest rarities. To explain this latter malformation, we must assume that the portion of the ureter, which lay on the left side, originally belonged to the left ureter, so that, con-

sequently, the upper half of the left, and the lower half of the right ureter were deficient, while the halves which were formed united to constitute one ureter, half belonging to each side. If this explanation be correct, the malformation must have taken place at a very early period of the development of the ureters, at a time in which both ureters consisted only of rows of cells, lying parallel to one another; for, in the period immediately following, the ureters are mutually too remote to admit of the hypothetic fusion taking place. Possibly there is a time at which the first foundation of both ureters consists of a single row of cells, which subsequently divides by a separation of the cells in a certain direction into two rows; in that case the occurrence can be explained by supposing that after this separation the development of the left superior and of the right inferior row of cells was arrested, and so but a single series remained. —*Virchow's Archiv*, March, 1858, p. 275.

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*On the Black Discoloration of the Tissues in the Human Body after the Use of Nitrate of Silver.* By J. VAN GEUNS.

EVEN Paulus Ægineta and Avicenna employed silver as a medicine and in diseases of the head. In the teaching of the *Signatura rerum*, belief in the efficacy of silver in cerebral diseases rested on the silvery lustre of the moon, as the moon and the head were in astrology connected with one another. At the end of the last century silver was very generally employed as a remedy, and principally for the cure of epilepsy. In many cases which resulted favourably a coloration of the skin was observed.

Swediaur seems to have been the first to take particular notice of this fact. An ecclesiastic, who had for some months used nitrate of silver, at last acquired a completely black skin[a].

Similar observations were published by Albers, Reimar, Rudolphi, Schleiden, and Chaufepié, and have been mentioned by Rayer in his "Maladies de la Peau."

The coloration occurs first on the nails of the hands. Falck makes it appear first on the lunula of the nail, as well as on the upper extremities and the face.

It extends subsequently to the conjunctiva, the lips, the gums, the cavity of the mouth, and the palate. Wedemeyer found all the internal organs coloured of a dark black; others, too, mention this more general diffusion of the deposition of silver. Silver has also been found in the urine of epileptic patients who have been treated with nitrate of silver.

No satisfactory investigation has as yet been instituted as to the nature of the coloration attending the use of silver, and what has been written on the subject consists mostly of hypotheses, accord-

[a] Médecine Eclairée par les Sciences Physiques, p. 342.

ing to which silver had been deposited in substance or in combination.

Rokitansky expressly says on this point, that our knowledge of the proper seat of the coloration is very deficient. Falck, on the contrary, believes that no doubt can exist as to the deposition of silver in the dark pigment of the skin in those who have used nitrate of silver internally. He quotes on this occasion a communication of Brandes, who states that he found oxide of silver in the skin of a coloured man. I will add, that he says he found it also in the bones as well as in other soft parts (Quarterly Journal of Science, 1830).

Delioux has given us most information on this subject. He believes that the colour of the skin is not caused by chloride of silver, and for these reasons:—

1. On account of the dark colour.

2. On account of the coloration of the parts which are not exposed to the light.

3. Because the reduction to chloride of silver by organic matters has not been fully proved; so that we cannot assign to the latter in this respect an equal power with light.

4. Because the experiments with albuminates are at variance with such a power.

He therefore assumes that finely divided silver is deposited in the skin, about in the same manner as the black spots by reduction arise on the skin after touching it with *lapis infernalis.*

For this view he adduces the following reasons:—

1. The occurrence of a precipitate of finely divided silver, when the serum of the blood is mixed with nitrate of silver.

2. The coloration of skin which has lain for some time in a solution of nitrate or chloride of silver.

Krahmer, who has published a remarkable work on silver as a medicine, believes that the coloration is caused by an albuminate of silver. Orfila gave dogs three or four scruples of nitrate of silver in six ounces of water, and killed them in four or five hours afterwards. He then found from three-quarters of a grain to a grain in the liver, the spleen, the kidneys, and the coats of the stomach.

The tinging of the skin and internal organs with a slate colour after the use of nitrate of silver is, therefore, nothing new. But the question as to the cause of this coloration we cannot consider to be satisfactorily answered; accurate experiments are still required to this end. On this account I thought that I ought not to withhold some investigations I have instituted on this subject. A patient who died some months ago in the city hospital, and who presented the colour in question after the use of nitrate of silver, afforded the immediate opportunity for these experiments.

The patient was under the care of my colleague Suringar. To the kindness of the latter I am indebted for the opportunity of communicating some particulars in reference to this patient.

I regret very much that I was unable to be present at the post-mortem examination, so that only some parts which were removed from the body served as the materials for my investigations.

The following is a brief report of the case during life. The patient was at the time of his admission thirty-five years of age. From his sixth year he suffered from epilepsy, as he believed, in consequence of suppressed tinea favosa. When he was fourteen years old nitrate of silver was given him according to Löbestein's formula (10 grains in 100 pills). He took five or six pills daily. At the end of six months the epileptic attacks ceased. On account of a threatening of a relapse, however, he took this preparation until he attained his nineteenth year, although not quite regularly; after this time, consequently for sixteen years before his death, he had taken no silver. He was admitted into the hospital in the last stage of pulmonary phthisis, and remained there four weeks until his death.

The post-mortem examination took place thirty-six hours after death. The entire body was very much emaciated. The general colour was bluish, especially on the face, the conjunctiva, and the hands. In the falciform process of the dura mater was a hard bony plate, presenting the regular osseous structure; it was anteriorly situated at the place which separates the two anterior lobes from one another. The arachnoid, pia mater, choroid plexuses, and ependyma of the ventricles of the brain were of a bluish colour. The substance of the brain and spinal marrow did not differ in colour from the normal condition. The membranes of the spinal marrow were of a bluish colour.

The cartilages of the ribs, as well as the subcutaneous areolar tissue of the chest, presented a blue colour.

The lungs themselves were studded with miliary tubercles, and exhibited an increase of bulk, as in pneumonia. In the apex of the left lung was a cavity as large as a pigeon's egg. The ramifications of the bronchi were of a bluish-red colour, as in bronchitis. The heart was small and normal; some serum was present in the pericardium, which latter was of a bluish colour. The cavity of the larynx exhibited numerous erosions, and even small ulcers; its mucous membrane, as well as the ventricles of the larynx, were blue; the bronchial glands were enlarged, and their tissue was very firm. The intestinal canal and peritoneum were coloured blue—the part of the peritoneum which invests the liver was also blue; the hepatic tissue was in other respects normal, as was that of the spleen. The tissue of the kidneys was normal; the papillæ were, however, remarkably coloured, while the cortical substance exhibited only a few black spots.

The skin, the kidneys, the bones, and cartilages were the parts particularly submitted to microscopic investigation.

The Haversian canals and the bony corpuscles, with their radiations, were of a dark colour; the medullary cavities were filled with a dark matter. In the cartilages of the ribs we here and there saw

a black nucleus, which became pale on the addition of cyanide of potassium; some bony cells, too, were evidently filled with a dark granular mass. The deposition was, however, most distinct in the skin and kidneys.

The dark Malpighian bodies were occasionally seen to be still connected with a tubulus uriniferus; in the pyramidal substance the tubuli were all very dark-coloured; hydrochloric acid made them exceedingly black and dark.

The black coloration of the perspiration glands in the skin was perceptible even with the naked eye. The sebaceous glands of the skin, too, were of a dark colour.

Evident as was the deposition of the black colour, it was not easy to decide how far the whole tissue was tinged.

In the microscopic preparations of cartilage and bones a very distinct dark brown colour was occasionally seen in the intercellular substance, which is, perhaps, to be considered as a specific coloration. The membranes of the tubuli uriniferi and of the Malpighian bodies were, like the intervening substance, covered with fine granules. In addition, dark objects were seen, which may be looked upon as black-coloured cells. The corium of the skin was bluish-gray; it was not, however, easy to decide whether it alone, or also the rete mucosum, or the epidermis, was coloured.

Is the colour caused by the presence of silver? To answer this question I availed myself of the assistance of Dr. Heynsius.

A portion of a rib was burnt, and the ashes so obtained were treated with hydrochloric acid. The whole was filtered, and what remained on the filter was washed with water, until the washing, treated with nitrate of silver, no longer exhibited any trace of chlorine. The residue on the filter was treated with nitric acid, and this nitric solution was examined for silver. But neither in the rib nor in the cartilage, which was similarly treated, could the presence of a trace of silver be demonstrated.

A sixth part of the kidney was now burnt, and the ashes so obtained were heated with carbonate of soda before the blow-pipe. In this manner some globules of silver were obtained, which, having been dissolved in nitric acid, were precipitated with hydrochloric acid as chloride of silver. A second attempt to demonstrate in like manner the presence of silver in the cartilage was attended with no better result than the first above described.

In what state of combination did, therefore, the silver occur in the kidney? That the substance was insoluble in the surrounding fluids, we may infer from its having been present during the long period of sixteen years. Was it chloride of silver? No; for liquid ammonia had no effect on it. Was it cyanide of silver? This we can also deny. Concentrated nitric acid produced a development of gas from the dark-coloured parts, which latter at the same time became of a lighter colour. The nitrate of silver so formed was partially precipitated by chlorates present in the surrounding parts,

as chloride of silver, which were recognised as bright flakes under the microscope.

Hydrochloric acid produced no development of gas, so that the gas eliminated by the action of nitric acid cannot have been carbonic acid. The coloration became darker in consequence of the brightening and contraction of the intervening substance.

Therefore, no oxide of silver can have been present.

If the silver had existed in the form of dichloride of silver, it must have dissolved in hyposulphite of soda, which it did not. It may, therefore, have been silver in a state of minute division.

It now occurred to me, by reacting on finely divided metallic silver, to test the supposition that the silver was present in a state of minute division. A preliminary experiment with cyanide of potassium gave the following result. A piece of linen carefully washed with distilled water to remove the chlorides was soaked with nitrate of silver, then dried and slowly burnt, and the ashes were treated with cyanide of potassium. Only a very small quantity of silver was found in the solution. Now, as minutely divided silver is soluble in cyanide of potassium, small portions of the kidney were laid in the latter, and the colour of these, as well as of the microscopic preparation they contained, was distinctly changed.

Hence it seems to follow that the silver was present in a state of minute division.—*Archiv für die Holländischen Beiträge zur Natur- und Heilkunde.* 1857. Band I., Heft 1 und 2, p. 106.

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## *Some Observations on the Dystrophia of Children.*

By Dr. R. KÜTTNER, of Dresden.

IN our daily intercourse, and, to some extent even in the field of science, the term atrophy has undoubtedly received far too wide an application and been confounded in its signification. Considering the phenomenon of far advanced emaciation as the essential feature, a number of morbid conditions in little children have been only too often comprised under the name atrophy, which are marked by a deep depression of nutrition; and children have been looked upon as atrophic, who, on a more accurate examination, and stricter employment of the term, would be recognised as suffering from a general dyscrasia or an organic affection. The correction of this abuse and the restoration of the word atrophy to its original more limited signification is, however, by no means so idle or unessential a matter as it may, perhaps, appear to many, but has, in addition to the greater accuracy in diagnosis to be thereby attained, also its special value in medical treatment.

The true atrophy, or—as we much more correctly denominate it—the dystrophia of children as an independent form of disease, pædodystrophia, pædatrophia, may, according to the signification of the word, necessarily comprise only that state of depressed nutrition

and general exhaustion, which in little children is occasioned by the insufficient amount or the unsuitable nature of the food. This essential original dystrophy is, therefore, to be strictly distinguished from all those states of emaciation and exhaustion which, occurring as the product of morbid processes, bear a purely symptomatic, secondary character. While in the latter (dystrophia symptomatica) the eye of the physician must be constantly directed to the causal morbid condition, at one time a long-continued local affection, especially of the organs of digestion or respiration, at another a general dyscrasia, as tuberculosis or inherited syphilis,—in the former (dystrophia morbus) the organization is originally, and, so far as morbid states do not accidentally concur, giving rise to complications, thoroughly normal, and suffers only from the want of the formative material so necessary to it. In the one case the physician must meet the affection by combating a morbid state; in the other, by administering suitable nourishment.

The development of genuine dystrophy is, as the organism constantly needs the access of nutritive matter, evidently possible at any time of life, but at no age is the tendency to it greater than in the earliest infancy. For, on the one hand, the delicate digestive organs of the child are by nature for a long time destined to one particular form of food, the mother's or the nurse's milk, all substitutes for which are only too apt to be insufficient; while on the other, the infantile system growing most rapidly, the more quickly and sensitively feels the want of suitable formative material. But dystrophy is exemplified not merely most frequently, but most accurately, in the young child, who, still for the most part free from products of disease, and still unaffected by exhausting bodily exertion or distracting mental affections, which, at a more advanced period of life, usually accompany a state of privation, and greatly modify its phenomena, only physically feels and exhibits the want of nourishment. For these reasons dystrophy has certainly been correctly admitted specially into the pathology of childhood, and considered as a particular affection of the earliest period of life, the time of suckling.

It is of practical importance to distinguish two species of dystrophy according to their origin, whether the latter be attributable to a simple deficiency of nourishment (dystrophia simplex), or whether the nature of the food is at the same time unsuited and irritating to the delicate digestive organs of the child (dystrophia dyspeptica). The former, of course, occurs almost only in sucklings, starving on the ill-supplied breast of the mother or the nurse; the latter, by far the more common, is mostly the sad result of artificial feeding, which carries numberless children to the grave[a].

[a] It is principally poor little children, committed to nurses, who are liable to this fate. A statistical table, deduced from the Reports of the Foundling Hospital, shows, that while among the children under their mothers' care, the mortality among children under two years of age did not amount to quite 19 per cent., in those under the charge of nurses it attained to 29 per cent.; and was generally caused by dystrophy.

A detailed description of the phenomena characteristic of the dystrophy of children might be superfluous to the readers of these pages: I shall, therefore, allude to only the most essential symptoms. Occupying the first place among them in a material point of view is the manifest deficiency of blood, exhibiting itself in the general paleness and in the diminished bodily heat. Hand in hand with it goes the insufficient metamorphosis of tissue, which, commencing with general relaxation and flaccidity, gradually leads to the complete disappearance of the cushion of fat, and finally gives the little sufferers an old or ape-like appearance. Among functional phenomena we have a constant craving for food, thrusting the little hands into the mouth; unceasing restlessness by day and night, which yields for only a short time to the administration of food, and at last passes into the highest degree of listless exhaustion; lastly, a very great diminution of the urine, often giving rise, through the acridity of the concentrated secretion, to a kind of dysuria, and a frequently torpid solid and scanty alvine discharge, which is watery and diarrhœal only when catarrh of the bowel exists. This collection of symptoms presents the idea of dystrophy in its simplest form. In dystrophia dyspeptica we observe, of course, in addition, the phenomena of deranged digestive powers and of the collection of indigestible matters in the stomach and intestinal canal, by which these organs are brought almost into a state of chronic catarrhal irritation. Therefore, vomiting, the occasional formation of acid flatulence and diarrhœa, erythema of the cavity of the mouth, with the development of fungi and of sores around the anus, appear as concomitant symptoms, which undergo numerous modifications in form and intensity according to the different nature of the deficiency in the nourishment. As secondary attendants on dystrophy, especially on its dyspeptic form, convulsive phenomena of all kinds may certainly occur, but they are in reality much rarer than is popularly supposed, the entire train of symptoms being only too readily attributed, not to its real cause, but to so-called inward spasms, and for these assistance is demanded. Public institutions, such as our Foundling Hospital, afford hundreds of opportunities of making observations of this kind. At one time the poor starved little ones are brought to seek relief for their constant uneasiness, their crying and their want of sleep; at another time, for their urinary affections; at another, for derangement of the bowels; but most frequently for the supposed inward spasms.

The post-mortem examinations in simple dystrophy present nothing characteristic in addition to the highest degree of deficiency of blood, as well as in general of insufficient nutrition of all the tissues. In dystrophia dyspeptica, on the contrary, we find traces of a catarrhal condition of the gastric and intestinal mucous membrane, with swelling and black punctation of Peyer's glands, or actual bursting and ulcerous destruction of the same. The fundus of the stomach, as well as some parts of the intestinal canal, are often

found in a state of gelatinous softening, in consequence of the presence of contents which have passed into a state of acid fermentation, while the liver appears at one time anemic, at another overloaded with dark blood, but the bile is always remarkably thin and pale. That complicating morbid conditions, frequently hastening or directly causing death, which leave their traces in the dead body, as for example pneumonia and cerebral affections, must be distinguished from pure dystrophy, is self-evident. The swelling and hardening of the mesenteric glands in atrophic patients, on which so much stress was formerly laid (as Dr. Stiebel, Jun., also has shown in his treatise "On the Condition of the Mesenteric Glands in Childhood, and their relation to the atrophy of the first year of life" (Frankfort-on-the-Maine, 1854), are by no means constant, and at least in no case constitute an essential post-mortem appearance in dystrophy, often as the latter is considered and described as tabes mesenterica.

As I have already remarked in the beginning of this paper, dystrophy is among the most frequent causes of death in the first year of life, as a very considerable number of artificially fed children fall a sacrifice to it. Notwithstanding, the prognosis is not at all so unfavourable as one might at the first glance suppose, and in every case it is much better than in the symptomatic variety caused by diseases. It is truly surprising how quickly and completely such children often recover, and indeed even within a few weeks become so changed as not to be recognised, so soon as food adapted to their digestive organs, and sufficient for their wants, has been supplied. If it is possible to transfer the suckling languishing on the empty breast of its mother, or the child wasting away on unsuitable artificial food, to a good nurse, care should be taken that if the latter appears unequal to her task, she should be exchanged for a better, the consequence of which will be the disappearance in a short time of all the symptoms arising from the insufficient supply of its wants, and the often rapid transformation of the little image of misery into the round, soft forms characteristic of infancy.

From what has been said it is evident, that from the nature of the case, the treatment of dystrophy is not to be pharmaceutic, but that the entire task of the physician consists in the administration of nourishment quantitatively and qualitatively suited to the wants of the child. It is attributable only to imperfect knowledge of the affection, and of its causes, that the treatment is so often actually different. All those far-famed children's powders and syrups, with which nurses, and even physicians are so ready, to combat particular symptoms, are as unavailing as tonics, astringents, or narcotics. They are only signs of a false diagnosis, and easily contribute to aggravate the patient's state. Unfortunately, it is, however, often impossible to procure for the little sufferers the only efficacious remedy—sufficient and suitable nourishment—which mostly can be found only in a good nurse. This is particularly the case in public institutions, which, destined for the service of the poorer classes, are

most frequently resorted to on the behalf of such sufferers, and yet can do nothing more than give suitable advice to the mothers or nurses. With the above view, we are in the habit of recommending, in the Dresden Foundling Hospital, for starving sucklings, the contemporaneous administration of good cow's milk, so as fully to satisfy the children, and, in those who are artificially fed, of regulating the diet as far as possible according to the principles which I have already published in my aphorisms on the feeding of little children. Medicines I give only according to special indications, as in cases where complications exist. Instead of them, I have derived great benefit, especially in dystrophia dyspeptica, from administering, three or four times a day, from eight to ten drops of Malaga, Hungary, or Port wine, to the little patients; and this plan I can under such circumstances the more strongly recommend, as, by prescribing the wine in the form of a medicine, the physician will no longer appear as an idle spectator, in the eyes of relatives, so often desirous of the administration of medicine. That this small quantity cannot act as a nutrient[a] is evident, but it acts as a condiment to the digestive organs, and makes them more capable of digesting and assimilating the food which is supplied often in sufficient quantity, but in a state of unsuitable preparation and admixture. Thus, at least, I believe the remarkable effect of wine under the circumstances above mentioned, which has been confirmed by hundreds of cases, is to be explained. When the dystrophy is removed, wine is of course again left off, as in well-fed, plethoric children it only too easily induces an insidious cerebral, affection, even though given in small but long-continued doses.—*Journal für Kinderkrankheiten*, April, 1858, p. 184.

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*On Emboli of the Superior Mesenteric Artery.* By OTTO BECKMANN.

AMONG the abundance of beautiful cases with which Professor Virchow has decorated his works on Thrombosis and Emboli are three of great interest, in which, with other vessels, the superior mesenteric artery was obstructed ("Ges. Abhandlungen", pp. 420, 438, 450). I venture to add to the foregoing a new case, which is but very slightly complicated, because in it a hitherto unobserved result of this affection was found in the intestine. The following is the case:—

The body of Katharina Treutlein, a pensioner, aged eighty, was brought for dissection, seventeen hours after her death, on the 19th of September, 1857. The body was rather emaciated, with slight œdema of the lower extremities. The heart was tolerably fatty,

[a] It is well known that Kletzinsky has discovered a considerable amount of lime in Malaga and Tokay wines, and that he ascribes to this fact a considerable share of their beneficial action.

with some tendinous spots, moderately hypertrophied, especially the left ventricle, with corresponding moderate dilatation of the cavities. The mitral valve was found with slightly shortened and thickened edges; the papillary muscles on the left side were short and thick, with strongly tendinous, partially calcareous points; the endocardium was opaque and thickened in spots. In the right side of the heart there was nothing worthy of note. The muscular structure of the heart was dense brownish-red, on the left side traversed by some tendinous striæ. The aortic valves were rather thick and rigid. The ascending aorta was very wide; on a section above the valves it measured nine centimetres (about three and a half inches), and, beneath the point of origin of the innominata, eleven centimetres; on becoming the descending aorta it rather suddenly contracted, although the latter still measured 6·5 centimetres (about two and a half inches). Beneath the origin of the renal arteries a contraction of the vessel to four centimetres (one and a half inches) took place from a fold projecting from the right side into its cavity. The aorta above its division measured 4·5 centimetres; the right iliac artery, 3·7; the left iliac, 3 centimetres. Throughout the whole arterial system, even to the finest branches, existed a state of chronic endarteritis; immediately in front of the constricted part was, in the inner coat of the arch of the aorta, a calcareous lamina, as large as a groschen [the size of a silver three-pence], which, somewhat loosened on the side looking towards the heart, projected directly into the cavity of the vessel.

Both pleural sacs contained some sanguineous fluid. The lungs were slightly adherent; the apices were highly coloured and condensed; the parenchyma was atrophic; in the left were two fresh hemorrhagic infarctions on the anterior surface of the lower lobe. In the small bronchi was a tolerably large quantity of gray viscid mucus.

The capsule of the spleen was rather thickened; the organ itself was moderately large and dense, presenting numerous fibrous cords in a scanty brownish-red pulp. The liver was thick, dense, and congested; between the acini were delicate fibrous fasciculi; the general appearance of the organ was brownish-red; more accurately examined it exhibited little acini, with red centres and darker periphery. The bile ducts were large. At the lower edge of the liver, somewhat displacing the gall-bladder, was situated a movable round tumour of the size of a small fist, bounded internally by the duodenum, and inferiorly by the colon. This tumour did not appear to be anywhere connected with the surrounding parts, lay in the laminæ of the peritoneum, and exhibited a cyst. In a moderately vascular capsule of dense connective tissue, in some places thickened and white, in others transparent, was a neutral, amber-coloured, clear fluid, containing a considerable quantity of albumen, in which floated some masses, as large as peas, consisting of finely granular fat, without further admixture than that of a small

amount of substance interstitial to the fat granules. No epithelium could be demonstrated on the wall of the capsule.

The left kidney was of normal size, dense; the surface was smooth, with evident lobular marking; the cortical substance was grayish-red and with distinct Malpighian bodies, many of them calcareous; the pyramids were fibrous. The right kidney was smaller, its surface uneven; the cortical substance was not much atrophied. There was tolerably extensive fatty degeneration in the cortical part of both kidneys, with a somewhat increased amount of intervening tissue; in the canals of the tubular portion at the basis was partly fatty detritus, or rather albuminous masses, with many pigment granules, towards the papillæ becoming homogeneous masses.

The stomach was dilated, the mucous membrane thickened, verucose, covered with reddish-gray viscid mucus. The mucous membrane of the duodenum, and of the greater part of the jejunum, was hyperemic, succulent, and swollen; the contents of the latter were fluid dark blood. The mucous membrane of the whole of the rest of the small intestine to near the ilio-cæcal valve was covered with greasy bloody masses, and appeared uniformly dark bluish-red, without further change. The microscope exhibited everywhere more or less decided imbibition with the colouring matter of the blood. The large intestine was filled with fæces coloured with bile, without the least admixture of blood; its mucous membrane was somewhat thickened; in the mucous membrane of the transverse colon were two small ecchymoses. In the superior mesenteric artery, exactly at the point where the ilio-cæcal artery is given off, was situated, at the bifurcation, filling the entire cavity, a thrombus about three-quarters of an inch in length, dense, only in parts somewhat deprived of colour, which was very slightly adherent to the unaltered vascular wall (leaving out of our consideration the general change of the arteries already mentioned), and extending about half an inch into the two branches, and ending in a cone. Nothing particular was observed in the mesentery.

In the femoral vein little thrombi were suspended in the valves, in addition some muscular veins of the thigh of the same side were plugged.

The dura mater was thickened; the pia mater was injected and œdematous. The brain was tolerably firm; the convolutions were small; the gray substance was atrophied. The ependyma of the ventricles was greatly thickened; the cerebral vessels were moderately altered.

The most remarkable points in this post-mortem examination, in addition to an extensive change in the vascular walls, particularly in those of the arteries, and the results of such a change, are the plugging of the superior mesenteric artery by a thrombus, and considerable hemorrhage in and upon the mucous membrane of the intestine throughout its whole extent, while no blood had been able to penetrate into the afferent arteries. That the latter circumstance

was due to obstruction of the vessels cannot be doubted, as no other cause for hemorrhage existed; the question is only how the bleeding occurred? The thrombus in the artery may, it appears to me, be decidedly considered as embolic, as it satisfies all the conditions of such a change; its situation at a bifurcation of the vessel, with a short prolongation into the branches given off; the emptiness of the arteries beneath the seat of obstruction; the relation of the thrombus to the vascular wall, are characteristics enough,—so that the circumstance that no parent coagulum or other source of origin could be found, cannot invalidate this opinion.

The possibility of the formation of a coagulum, whether in any part of the left side of the heart, or, as is more probable, on some rough part of the wall of the aorta, perhaps on the calcareous plate already mentioned, is certainly admissible from the above described state of the circulatory apparatus; the entire coagulum, which had formed, was then probably separated and conveyed into the mesenteric artery. Now, this emboli was formed not long before the woman's death, as is shown by the state of the contents of the large intestine and the freshness of the effused blood, which latter had for the most part flown into the upper part of the small intestine, and was driven along; by examining similar cases and by experiments on animals, the supposition is sanctioned that the emboli had taken place within the last twenty-four hours, certainly not immediately before death, as a certain time is necessary for the development of the hemorrhage. In every vascular rupture we have a disproportion between the degree of distention and the cohesive power of the membrane; an enormous distention is as capable of bursting the normal coats as the normal pressure is of destroying the continuity of an altered and weakened vascular membrane. Hence is evident the importance of lesions of nutrition of vessels, particularly of the capillary membranes, in thromboses of different arteries, to which Virchow has repeatedly called attention. It will also be understood why a certain time is requisite before the hemorrhages usually occur under such circumstances. In rabbits in whom I tied the superior mesenteric artery in the upper part of its course, no hemorrhage had occurred in from four to six hours. In the above case the minute vessels had manifestly previously been in a weakened condition, and therefore a slighter force or a shorter time was required to produce the extensive solutions of continuity. The question now is, how the membranes are distended to bursting, or in what way the blood after the obstruction of the large artery again reaches the capillary vessels. For this the well-known modes exist, namely, the blood arrives in the capillaries through the collateral arteries or through the veins, in which latter a certain quantity of blood stagnates on account of the deficient *vis a tergo*, by regurgitation from the neighbouring veins which are still in action. After a review of several circumstances, the author inclines to the latter mode as affording the best explanation of the hemorrhage in the intestinal mucous

membrane accompanying the obstruction of the superior mesenteric artery in the above recorded case.

Lastly, I would allude to that peculiar cyst of the peritoneum above described, although I regret that my account of it must be imperfect. Such formations appear to be rare. In the "Bulletin de la Soc. Anatom.," 1851, p. 135, Mesnet describes a serous cyst, of the size of a large egg, in the mesentery towards the end of the small intestine, which was found in a woman. Whether the cyst-like tumour described by James Grey Glover (a large steatomatous tumour of the lesser omentum, Edinburgh Medical Journal, April, 1857) was of this nature, I cannot decide.—*Virchow's Archiv*, Bd. xiii., viertes und fünftes Heft, 1858, p. 501.